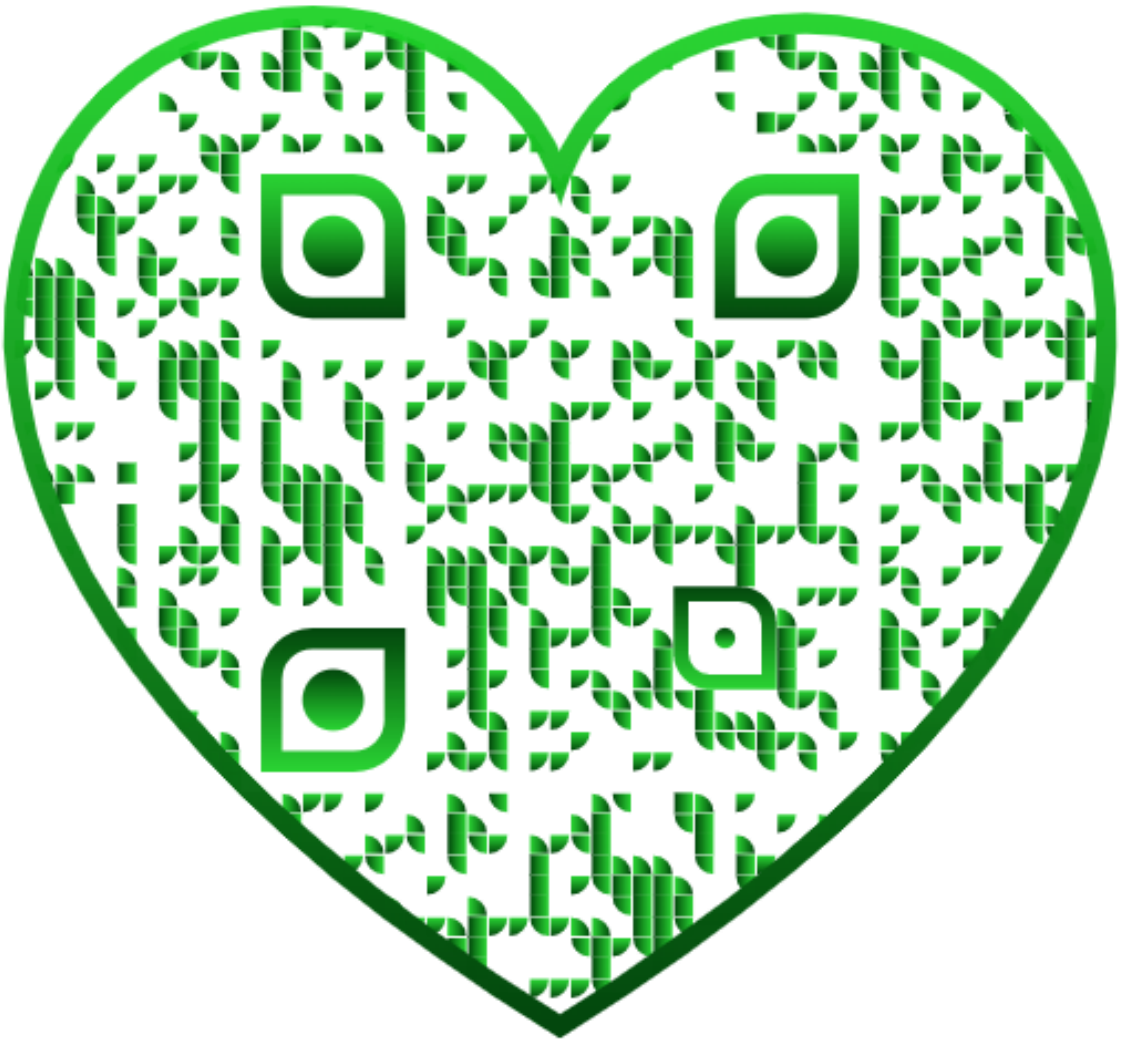
E.N.T.

اعداد وتصميم :- خليل سراج

شكر وتقدير لـ:-

د. بشرى الشميري



Symptoms of ENT

symptoms of Ear	symptoms of Nose	Symptoms of larynx	Symptoms of Pharynx
1. Deafness 2. Tinnitus 3. Discharge 4. Deformity 5. Earache (pain) 6. Vertigo 7. Headache 8. Facial palsy 9. Eyes symptoms 10. Swelling	1. Nasal obstruction 2. Nasal discharge 3. Epistaxis 4. Deformity 5. Sneezing 6. Smelling 7. Snoring 8. Swelling 9. Itching 10. Headache 11. Facial pain 12. Eye symptoms	1. Difficult breathing 2. Difficult swelling 3. Distance metasis 4. Change voice 5. Chocking 6. Cough -horses voice -strider 7. Regulation 8. Pain 9. Loss weight 10. Neck swell	1. Nasopharynx -nasal obstruction -nasal discharge -snoring -sleeping apnea 2. Oral phranyx -dysphagia -hot potato voice -foeter oris -trismus 3. Hypophrynx -horses voice -strider -regulation -loss weight -neck swelling

Ear

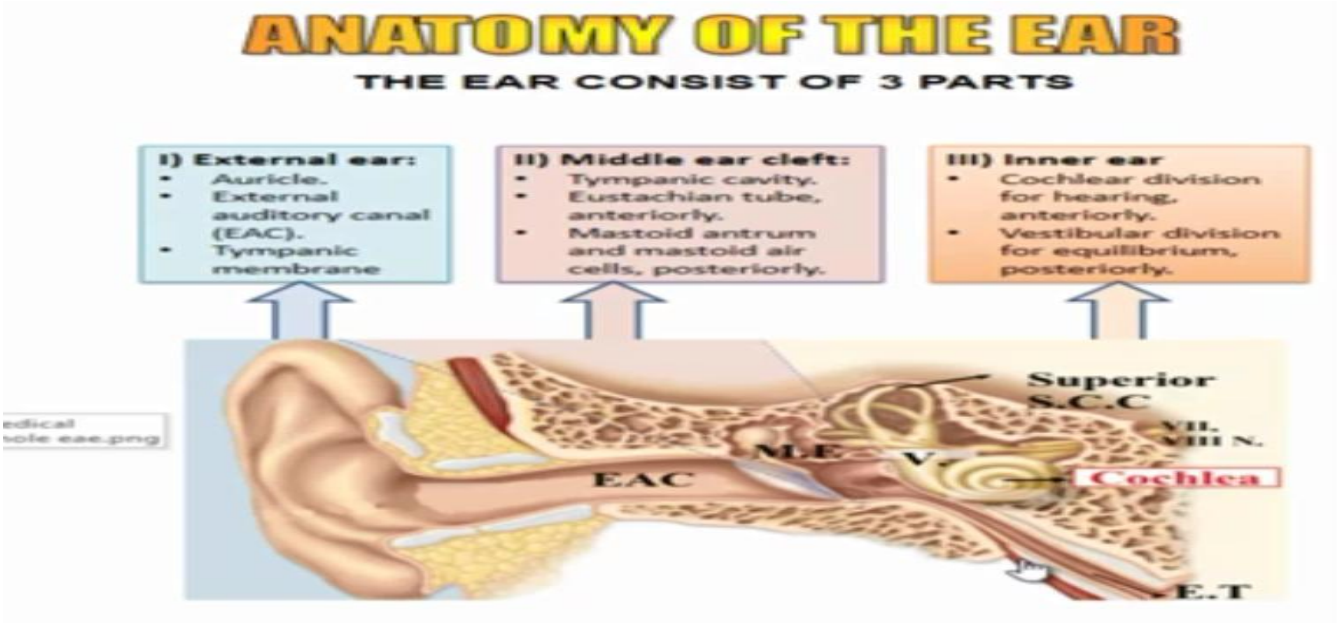
Q1) Symptoms of ear diseases :-

1- Deafness. 2- Tinnitus 3- Discharge 4- Deformity.

5- Headache. 6- Vertigo. 7- Otalgia. 8- Facial paralysis.

9- Ear-ache. 10- Swelling.

Q2)anatomy of ear ?



Ear can be divided into three parts:

I. External ear:-	II. Middle ear	III. Inner ear (situated in petrous part of temporal bone).
Auricle External Auditory Canal (EAC). Tympanic membrane (Drum).	Middle Ear Cavity (ME). Mastoid air cells. Eustachian Tube (ET).	Bony labyrinth. Membranous labyrinth.

Q3)Anatomy of external auditory meatus :-

✍ External acoustic meatus, external auditory meatus (EAM) :- (Latin: meatus acusticus externus)

- Is a tube running from the outer ear to the middle ear.
- The adult human ear canal :-

-Extends from the pinna to the ear-drum.

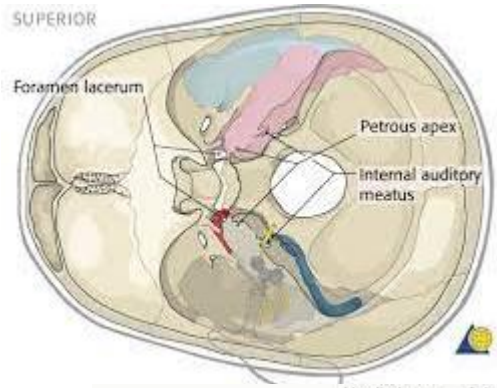
-length →24m about (2.5c)

-diamter →0.7 centimeter about (0.3 intch) in

- Structure :-The human ear canal is divided into two parts :-

1- Elastic cartilage part	2- Bony part
- Forms the outer one third of the canal. 16 m	- Forms the inner two thirds. 8 m
- Its **anterior** and **lower** wall are cartilaginous	- Is much shorter in children and is only a ring(annulus tympanicus) in the newborn.
- Whereas its **superior** and **back wall** are fibrous.	
- The cartilage is the continuation of the cartilage framework of pinna.	

Q4) Anatomy of Internal auditory meatus :-



✍Auditory meatus (also meatus acusticus internus, internal acoustic meatus, internal auditory canal, internal acoustic canal, or IAC)

- Is a canal within the petrous part of the temporal bone of the skull between :-

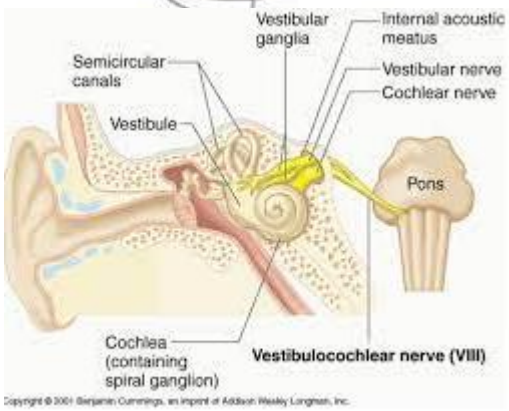
1- Posterior cranial fossa.

2- Inner ear.

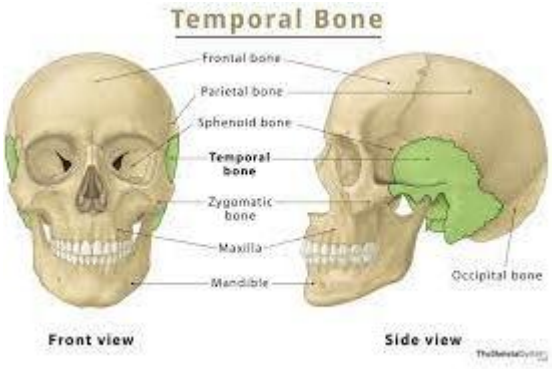
- Structure :-

-The opening to the Meatus :- is called :-

(Porus acusticus internus or Its English translation and internal acoustic opening).
-It is located :- - Inside the posterior cranial fossa of the skull.
- Near the center of the posterior surface of the petrous part of the temporal bone.
-The size varies considerably; its margins are smooth and rounded.
-The internal auditory meatus :-
① Is short (about 1 cm). ② Runs laterally into the bone.



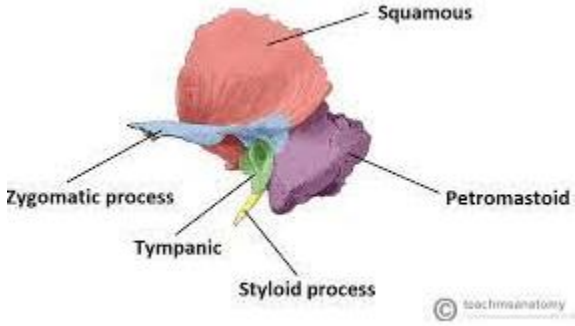
Q5) Anatomy of temporal bone :-



●Temporal bones are situated at the sides and base of the skull, and lateral to the temporal lobes of the cerebral cortex.

●The temporal bones are overlaid by the sides of the head known as the temples and house the structures of the ears.

●The lower seven cranial nerves and the major vessels to and from the brain traverse the temporal bone.



- Parts of temporal seen below in the 4 question.

●Parts of temporal bone :-

<u>The temporal bone consists of four parts :-</u>

1- Squamous part	- Is the **largest**. - Most superiorly positioned relative to the rest of the bone.
2- Tympanic part	- Is relatively **small**. - Lies inferior to the squamous part.
3- Mastoid part	- The zygomatic process is a long, arched process projecting from the lower region of the squamous part and it articulates with the zygomatic bone. - Postero-inferior to the squamous is the mastoid part.
4- Petrous part	- Fused with the squamous and mastoid parts. - Between the sphenoid and occipital bones lies the petrous part. - Which is shaped like a pyramid.

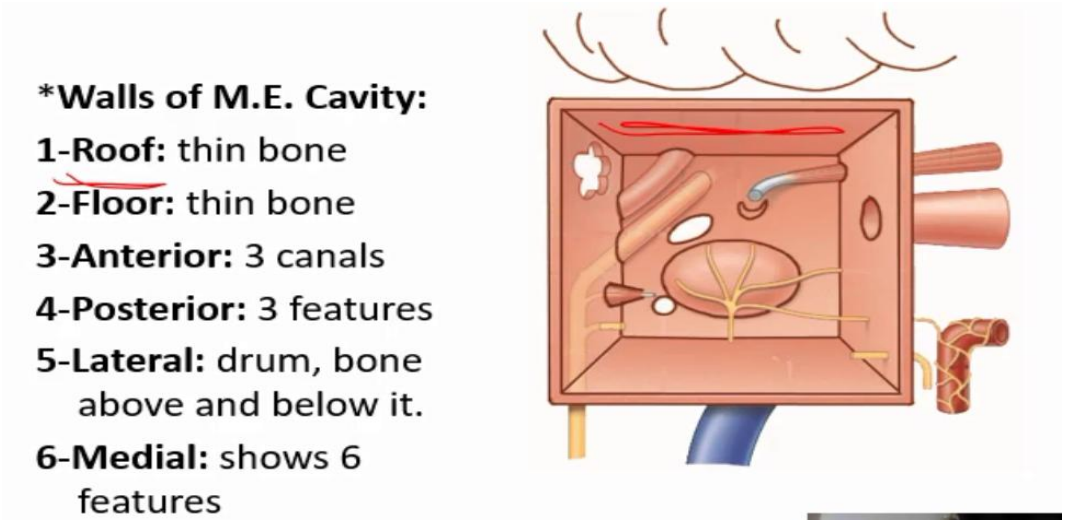
Q6) **Anatomy of Middle ear cleft :-**

- The middle ear is the portion of the ear internal to the ear-drum, and external to the oval window of the inner ear.
- Also the mammalian middle ear contains **three ossicles,**
- which transfer the vibrations of the ear-drum into waves in the fluid and membranes of the inner ear.
- The hollow space of the middle ear is also known as **the tympanic cavity**.
- The auditory tube (also known as the **Eustachian tube or the pharyngo-tympanic tube**) joins the tympanic cavity with the nasal cavity (nasopharynx), allowing **pressure to equalize between t**he middle ear and throat.
- **The primary function of the middle ear :-**

Is to efficiently transfer acoustic energy from compression waves in air to fluid–membrane waves within the cochlea.

Q7) Definition of Middle ear :- (Don't write cavity it is cleft).

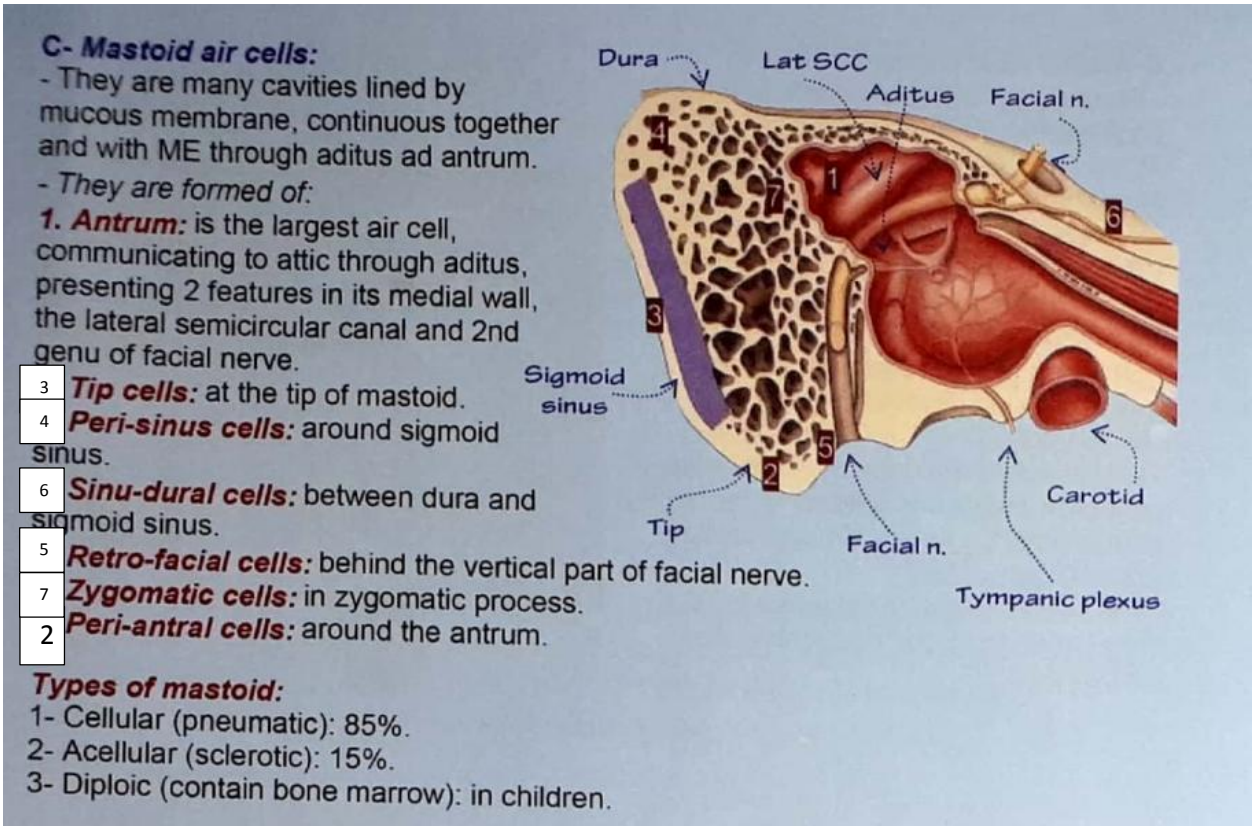
- The middle ear is the portion of the ear internal to the eardrum and external to the oval window of the inner ear.



Q8) **Types of Mastoid air cells and Definition :-**

Definition :- many cavites lined by mucosus membrance …..

Types :- 1- Cellular 85%. 2- Acellular 15%. 3- Diploic.


C- Mastoid air cells:
- They are many cavities lined by mucous membrane, continuous together and with ME through aditus ad antrum.
- They are formed of:
1. Antrum: is the largest air cell, communicating to attic through aditus, presenting 2 features in its medial wall, the lateral semicircular canal and 2nd genu of facial nerve.
3 Tip cells: at the tip of mastoid.
4 Peri-sinus cells: around sigmoid sinus.
6 Sinu-dural cells: between dura and sigmoid sinus.
5 Retro-facial cells: behind the vertical part of facial nerve.
7 Zygomatic cells: in zygomatic process.
2 Peri-antral cells: around the antrum.
Types of mastoid:
1- Cellular (pneumatic): 85%.
2- Acellular (sclerotic): 15%.
3- Diploic (contain bone marrow): in children.
Dura
Lat SCC
Aditus
Facial n.
Sigmoid sinus
Tip
Facial n.
Carotid
Tympanic plexus

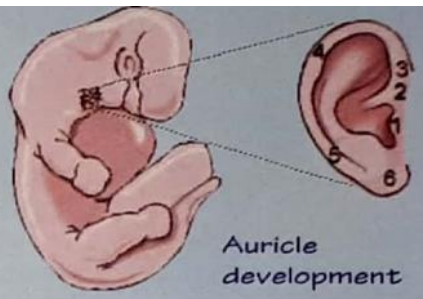
Q10)- Enumerate Congenital disease of ear

1- Defect in size . 2- Defect in shape. 3- Pre-auricular cyst and fistula

4- Accessory in shape.

CONGENITAL:

The auricle develops from 6 mesenchymal proliferations which are derived from the 1st and 2nd branchial arches; they are located around the 1st branchial cleft from which the EAC develops. Congenital anomalies may be unilateral or bilateral.



Auricle development

The anomalies may be:

1- Defect in size:
Anotia (no auricle),
Microtia (small auricle),
Macrotia (large auricle).
Treatment: plastic surgery before school age.

Microtia & aural atresia

2- Defect in shape:
Bat ear (protruding or lop ear).
Treatment: plastic surgery before school age.

3- Accessory auricle:
Small cartilage anterior to the auricle.
Treatment: surgical removal if it is large.

4- Pre-auricular cyst and sinus:
It is usually present at the root of the helix, presented with cystic swelling, repeated infection and discharge.
Treatment: surgical removal

Bat ears

5- Congenital aural (meatal) atresia:
Obstruction of the EAC due to defect in 1st branchial cleft. It is more commonly to be associated with ME hypoplasia or ossicular fixation and it is rarely associated with inner ear anomalies.

Clinical picture:
- Microtia or Anotia of auricle: may be present.
- CHL: rarely mixed hearin loss (if there is inner ear anomaly).

Investigations:
- CT: to assess the anatomy (Middle ear, Inner ear and length of atresia).
-ERA (Evoked Response Audiometry): to assess the hearing (to see the cochlea is functioning or not) (See Audiology).

Treatment:
- Hearing aid: in bilateral cases to preserve hearing till the age of surgery.
- Meatoplasty: done before school age.
- Plastic surgery to the auricle (if there is microtia).

Aural (meatal) atresia & accessory auricle

Q11) Ear discharge (otorrhea) **:-**

Definition :- Is any fluid that comes from the ear.

Types :-

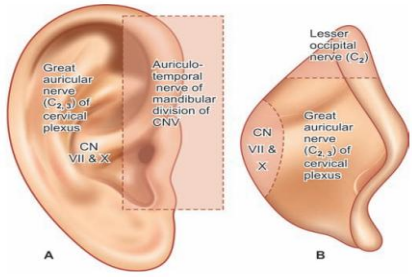
1- Chronic Otitis Media	Of different types depending on the cause of the infection whether it is "allergic, bacterial or fungal otitis".
2- Allergic otitis externa	Causes an irritation in ear canal and the discharge here is **clear watery** and **odorless.**
3- Bacterial otitis externa	Given raise to **thick yellow-green purulent pus** mixed With debris.
4- Fungal otitis (Otomycosis)	- Give rise to thick wite **yellow discharge** (Similar to **wet blotted paper**). - This may contain black colored spores and hyphae.

Q12)Definition and Causes of Referred pain in otalgia ? Referred pain :-

- The neuro-anatomic basis of referred Ear ache rests within **one of five** general neural pathways.
- The general ear region has a sensory innervation provided by **four cranial nerves** and **two spinal segments.**
- Hence, pathology in other "non-ear" parts of the body innervated by these neural pathways may refer pain to the ear.

These general pathways are :- 1975

1- Via **Trigeminal** nerve [cranial nerve V]	①-(Rarely, trigeminal neuralgia can cause earaches. ②-oral cavity carcinoma can also cause referred ear pain via this pathway)
2- Via **Facial** nerve [cranial nerve VII]	①This can come **from the teeth,** ②the **temporo- mandibular joint**(due to its close relation to the ear canal), ③the parotid gland.
3- Via **Glossopharyngeal** nerve [cranial nerve IX]	This comes from the oropharynx, and can be due to : 1- Pharyngitis. 2- Pharyngeal ulceration. 3- Tonsillitis. 4- Carcinoma of the oropharynx (base of tongue, soft palate, pharyngeal wall, tonsils).
4- Via **Vagus** nerve [cranial nerve X]	①This can arise from **the laryngopharynx in carcinoma** of this area ②or from the **esophagus** in GERD.
5- Via the **second** and **third spinal segments**, C2 and C3.	


Great auricular nerve (C2, 3) of cervical plexus
CN VII & X
Auriculo-temporal nerve of mandibular division of CNV
Lesser occipital nerve (C2)
CN VII & X
Great auricular nerve (C2, 3) of cervical plexus
A
B
Figs 5A and B: Nerve supply of right pinna. (A) Lateral surface; (B) Medial surface

Q13)- Why furuncle otitis External painful :-

Because the skin adherent to the cartilage and No space of the pus.

Q14) 14- Definition and theories of cholesteatoma :-

Definition :- It is keratinized stratified squamous Epithelium skin in the Middle ear.

- it is present Normally in External ear Only.

Theories :-

1- Congenital cholestatoma theory.
2- Migration theories (Most acceptable) :- Central or Attic or marginal perforation
3- Metaplasia theory.
4- Retraction pocket theory.

Symptoms :- presets discharge ,deafness ,tinnitus
Treatment :- surgical (radicalmastoecomy)

Q15) Definition of hematoma of ear auricle and it's Treatment :-

Definition :- Collection of blood between perichondrium and cartilage.

Treatment :-

1- Antibiotics.

2- Incision and evacuation with application of light bandage.

Q16)Indication, contraindication and complications of ear wash :-

Indication :-	Contraindication :-	Complications :-
1- Foreign body **2- Otomycosis** 3- Ear wax.	1- **Foreign body :-** - Impacted. - Vegetable. 2- **Otitis external** :- - Bacterial. - Viral. 1- Perforation :- - Traumatic - Pathological as CSOM	1- Injury of auditory canal. 2- Infection (otitis media or otitis externa). 3- Stimulation of inner ear 4- Stimulation (vagal stimulation).

17- Types and Treatment of Otitis media :-

Types :-

A- Acute :- 1- Acute otitis media without effusion. 2- Acute otitis media with effusion.

3- Aero otitis media. 4- Acute viral otitis media.

B- Chronic :- 1- Chronic suppurative otitis media (FR and AA).

2- Tuberculous otitis media.

3- Syphilitic otitis media.

Treatment :-

1- Oral and topical pain killers are effective to treat the pain caused by otitis media.

2- Decongestants and antihistamines (either nasal or oral) are Not recommended due to the lack of benefit and concerns regarding side effects.

3- Antibiotics.

4- Tympanostomy tubes ("grommets") :- Are recommended in those people who have three or more episodes of acute otitis media in 6 months or four or more in a year, with at least one episode or more attacks in the preceding 6 months.

*In chronic cases with effusions :- Insertion of tympanostomy tube into the eardrum reduces recurrence rates in the 6 months after placement but has little effect on long-term hearing.

18- Classification of infective otitis Externa :-

A- Viral O.E :-	B- Bacterial O.E :-	C- Fungal :-
- Herpes simplex.	- Localized :- Staphylococcal.	- Aspergillus niger.
- Herpes zoster.	- Diffuse :- Diffuse inflammation.	- Candida albicans.
- Bollous myringitis.	- Malignant :- Pseudomonas auerginosa.	

19- Types of bacterial otitis externa :-

سؤال مكرربطريقة ثانية

A- Loclaized (furuncle) :-	B- Diffuse :-	C- Malignant :-
- Very painful.	All the canal.	- In immunocomporomised patient.
- In ext. 1/3 = in hair follicular		- Caused by pseudomonase aergenosa.

20- Types of Fungal in ear :- سؤال مكرر

1- Aspergillus niger. 2- Aspergillus flarus. 3- Candida albicans.

21- Classification of otitis externa :- سؤال مكرر

A- Reactive :- Eczema.

B- infective :-

1- Bacterial :-	2- Viral :-	3- Fungal :-
- Loclaized :- Staph.	- Herpes Simplex virus (HSV)	- Otomycosis.
- Diffuse.	- Herpes zoster (HZ).	
- Malignant :- Pseudomonase aurgenosa.		

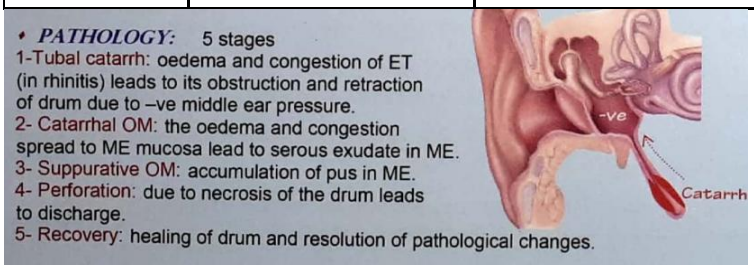
22- Types of acute otitis media (A.O.M) :-

1- Eustachain tube catarrh O.M. 2- Middle ear catarrh O.M. 3- Suppurative O.M.

4- Perforation O.M. 5- Recovery O.M.

23- Stages of acute otitis media and Treatment of 3rd stage :-

	Stage 1	**Stage 2**	**Stage 3**	**Stage 4**
	Eustachian tube catarrh :- (= inflammation of E.T lead to obstruction of E.T).	Middle ear catarrh :- (= Effusion in Middle ear).	Suppurations :- (= Accumulation of pus). - Symptoms its Peak. = Sever → fever, pain, + decrease hearing.	Perforation :- (Not treatment) Blood and pus exit from perforated tympanic membrane (T.M) lead to :- - Symptoms decrease -Loss of hearing.
Appearance	Retracted of	Congenital tympanic	Bulging of	Perforated tympanic
	tympanic membrane (T.M).	membrane (T.M) [Blood vessel may appear].	tympanic membrane (T.M).	membrane (T.M).
Treatment			.....	


PATHOLOGY: 5 stages
1-Tubal catarrh: oedema and congestion of ET (in rhinitis) leads to its obstruction and retraction of drum due to –ve middle ear pressure.
2- Catarrhal OM: the oedema and congestion spread to ME mucosa lead to serous exudate in ME.
3- Suppurative OM: accumulation of pus in ME.
4- Perforation: due to necrosis of the drum leads to discharge.
5- Recovery: healing of drum and resolution of pathological changes.
-ve
Catarrh

24- Classification of chronic otitis media :-

A- Non-suppurative otitis media :-

1- Secretory OM.

2- Adhesive OM.

B- Suppurative otitis media :-

1- Safe CSOM (Tubo-tympanic).

2- Unsafe CSOM (Attico-antral).

25- Classification of chronic suppurative otitis media :-

1- Tubotympanic (T.T) :- Safe.

2- Atticoantral (A.A) :- Unsafe.

26- Different between 2 types of chronic specific otitis media :-

	A- Safe CSOM (T.T)	**B- Unsafe CSOM (A.A)**
Discharge	- Intermittent. - Profuse. - Mucopurulent.	- Persistent. - Scanty. - Purulent.
Perferation	- Central (perforation Anterior in pars tansa). - Cholestoma and fistula Does Not present. - Granulation tissue and Polyp present (+).	- Marginal or Attic (perforation Postero-superior part). - Cholestoma always present. - Fistula may be present. - Granulation tissue and Polyp present (++).
Organism	Pseudomonas aurgenosa.	Pseudomonas auerginosa.
Complications	Less common.	More common Complication.
Treatment	Tympanoplasty.	Radical mastoidectomy.

27- Cranial complications of otitis media :-

1- Mastoditis :- Inflammation of mastoid antrum and air cells.

2- Petrositis :- Inflammation of air cells in the petrous apex

3- Labryrinthitis :- Inflammation of inner ear.

4- Facial paralysis.

28- Complication of Suppurative O.M :-

A- Cranial complications	B- Intra-cranial complications	C- Extra-Cranial complications
1- Mastoditis. 2- Labryainthasis. 3- Petrosis. 4- Facial paralysis.	1- Extra-dural abscess. 2- Sub-dural abscess. 3- Meningitis. 4- Brain abscess. 5-Lateral sinus in /thrombophlebitis. 6- Otitic hydrocephalus.	1- Otitic externa. 2- Citteli's abscess. 3- Bezold's abscess. 4- Jagular Vein thrombosis

29- Treatment of attico-antral suppurative otitis media :-

- The Treatment is Surgical. - The classic Treatment is Radio-mastoid-ectomy.

30- Treatment of secretory otitis media :-

A- Medical :- 1- Treatment of cause :- infections or adenoid
2- Systemic Antibiotic :- To prevent recurrent infection.

3- Steroids.

4- Mucolytics :- To dissolve mucoid secretion.

5- Decongestant nasal drop :- To open E.T.

B- Surgical :- if the medical failed. → Myringo-tomy

31- Definition, causes, Clinical features and management of Localized otitis externa :-

Definition :- Inflammations of the external canal (otitis externa) : is the generic term applied to all inflammatory condition of the external meatal skin.

Etiology :- The a etiology can be divided into two ground division but more than one factor may present at the same time :-

1- Infective due to :-

1- Bacterial :- a- Localized (circumscribed) : Furunculosis.
b- Diffuse infection.
c- Malignant otitis externa.

2- Fungal.

3- Viral :- a- Bullous myringgitis. b- Herpes zoster. c- Herpes simplex.

2- Reactive caused by :- 1- Eczema. 2- Seborrheic dermatitis.
3- Neuro-dermatitis.

Clinical features :-

1- Pain in the ear (may be severe and resistant to analgesics).

2- Discharge (may be sero-purulent and foetid due to osteitis).

3- Granulations (may be seen in the meatus, especially on it's floor).

4- Cranial nerve paralysis may affect the (vii, ix, x , xi and xii) the cranial nerve.

*Rarely Gradenigo's syndrome may result from involvement of the 5th and 6th cranial nerves.

Treatment :-

A- Medical :- 1- Control of diabetes. 2- Anti-pseudomonal drugs locally and generally.

B- Surgical :- May range from :-

1- Removal of granulations. To → 2- Radical mastoidectomy.

32- What is the Malignant otitis externa, complication and Treatment :- مكرر

Definition :- a pseudomonas infection, may be fatal, occuring in the immunoj-
suppressed patient.

Complications :- 1- …… 2- …….. 3- …….

Treatment :-

A- Medical :-

1- Control of diabetes.
2- 2- Anti-pseudomonal drugs locally and generally.

B- Surgical :- May range from :-

1- Removal of granulations. To → 2- Radical mastoidectomy.

33- Definition, clinical features and treatment of Otitic barotrauma (Aero otitis media) :-

Definition :- Is non-suppurative condition resulting from failure of Eustachian tube to maintain middle ear pressure at atmospheric level.

Or

It is Trauma to the ear due to the development of negative pressure in the middle ear cleft, relative to the Environment.

Clinical features :-

1- Severe earache, Hearing loss (is usually conductive but Sensori-neural type of loss may be also seen) and Tinnitus are common complaints.

2- Tympanic membrane appears Retracted and Congested. (it may get Rupture).

3- Middle ear show air bubbles or hemorrhagic effusion.

Treatment :- - The aim is to Restore middle ear aeration.

In mild cases :-

1- Decongestant nasal drop Or oral nasal Decongestant with Antihistamines are helpful.

2- In presence of fluid Or failure of the above methods,(Myringotomy may be performed).

Otitic barotrauma

Trauma to the middle ear caused by atmospheric pressure changes in relation to the middle ear pressure.

• **PREDISPOSING FACTORS:**

Eustachian tube (ET) obstruction by:
- Allergic rhinitis, or nasal polyps.
- Common cold.
- Deviated septum.
- Adenoid.

Descent
Descent

• **MECHANISM:**
- Normally the ET allows air to enter middle ear (ME) to equalize pressure on both sides of the drum.
- When the ET close, the drum will retract (-ve pressure in ME) → in mild cases.
- During rapid descent of the airplane, the atmospheric pressure increases and the ME pressure decreases (relative to atmospheric pressure) leading to ME effusion and sometimes bleeding inside the ME (Hemotympanum) → in moderate cases.
- When the ME pressure becomes severely decreased, it will lead to rupture of the drum → in severe cases.

N.B. The symptoms develop during descent both in flying and in deep sea diving.

Mild
Retracted TM

• **CLINICAL PICTURE:**

Symptoms:
- Deafness and tinnitus.
- Pain in the ear.
- Sensation of ear fullness.

Moderate
Effusion

Signs: according to the stage.

- Otoscopy:
- Mild cases: Retracted drum (signs?).
- Moderate cases: Effusion in middle ear (or haemotympanum).
- Severe cases: Rupture of the drum + blood clot in EAC.

- Tuning Fork: CHL (BC > AC).

N.B. Rarely; the inner ear may be affected in severe cases, oval or round window may rupture resulting in perilymph fistula and SNHL

Severe
Ruptured TM
Bleeding per ear

• **TREATMENT:**

a. *Prophylactic*:
- Avoid 2: Flying with nasal obstruction.
  Sleep during flying.
- Give 2: Decongestant nasal drops for nasal obstruction before fly.
  Chewing gum.

b. *Curative*:
- In mild cases: Decongestant nasal drops and Valsalva's maneuver to open ET.
- In moderate cases: Myringotomy and drainage.
- In severe cases: Myringoplasty if no healing within 3 - 6 months.

34- Myringotomy indication :-

A- Acute suppurative otitis media :- For duringe

1- Bulging drum.

2- Small and light up perforation.

3- Facial paralysis and Mastoditis.

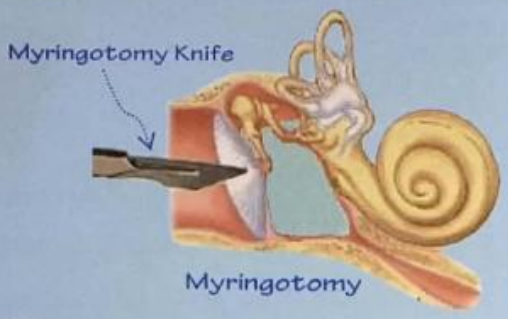
B- Otitis baro-trauma.

C- Secretory otitis media.

Operations

Myringotomy

Incision of the drum.

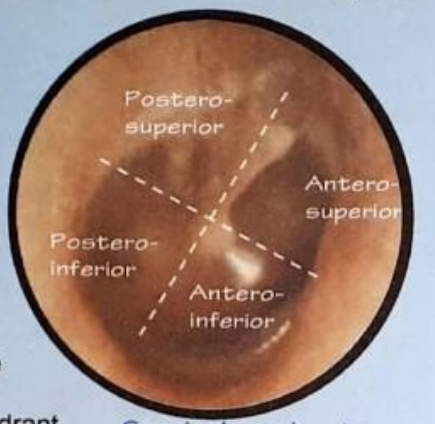


Indications:

1- Acute otitis media (AOM): for drainage
Indicated if there is:
a) Bulging drum.
b) Small or high up perforation.
c) Failure of medical treatment for 48 hours (especially in children)
d) Complications as facial paralysis or mastoiditis.
2- Otitic barotraumas: for drainage.
3- Secretory otitis media (SOM) with insertion of ventilation tube: for ventilation, done after failure of medical treatment.

Technique:

- Anaesthesia:
. General anaesthesia (GA) in children.
. Local anaesthesia (LA) or GA in adults.
- Site of incision:
In the anterior half of the drum; the anterior-superior quadrant is more preferred than the anterior-inferior quadrant for placement of ventilation tube (as there is lack of epithelial migration, so, delay in tube extrusion).
Posterior-inferior is another option for drainage in AOM.
It cannot be done in the posterior-superior quadrant as it may lead to injury of incudostapedial joint.



Surgical quadrants of TM

N.B. it is commonly performed in the antero-inferior quadrant as it is more accessible.

Advantages of doing myringotomy in AOM:
- To relief pain.
- Surgical incision heals better than pathological perforation.

Complications:

1) Injury to:
   a) Incudostapedial joint.
   b) High Jugular bulb.
2) Persistent perforation.
3) Tympanosclerosis.

Incision

Insertion of tube

The tube in place

35- Definition, Clinical manifestation and Management of Petrositis :-

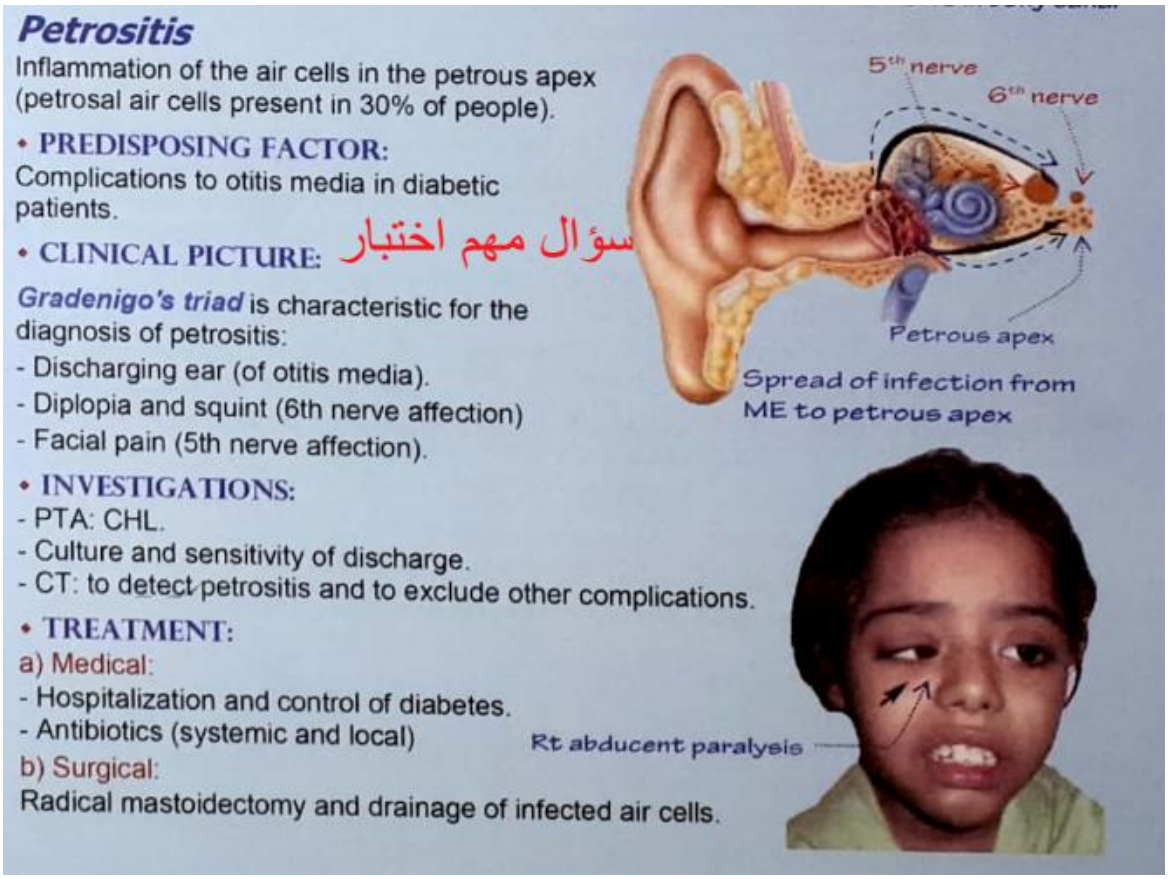
Definition :- It is inflammation of air cells in petrous apex, more in DM patient after OM.

Clinical manifestation :- **Gradenigo's triad** [Discharge, 5th CN palsy (facial pain), 6th CN palsy (diplopia and squint)].

Management :-

Investigation :- 1- PTA (CNL). 2- Culture. 3- CT.

Treatment :- 1- Antibiotics. 2- Radical mastoidectomy.


Petrositis
Inflammation of the air cells in the petrous apex (petrosal air cells present in 30% of people).
• PREDISPOSING FACTOR:
Complications to otitis media in diabetic patients.
• CLINICAL PICTURE:
سؤال مهم اختبار
Gradenigo's triad is characteristic for the diagnosis of petrositis:
- Discharging ear (of otitis media).
- Diplopia and squint (6th nerve affection)
- Facial pain (5th nerve affection).
• INVESTIGATIONS:
- PTA: CHL.
- Culture and sensitivity of discharge.
- CT: to detect petrositis and to exclude other complications.
• TREATMENT:
a) Medical:
- Hospitalization and control of diabetes.
- Antibiotics (systemic and local)
b) Surgical:
Radical mastoidectomy and drainage of infected air cells.
5th nerve
6th nerve
Petrous apex
Spread of infection from ME to petrous apex
Rt abducent paralysis

36- Definition and etiology of Menieares disease :-

Definition :- It is hydrops of membranous labyrinth leading to attacks of Vertigo, deafness and tinnitus.

Etiology :-

1- Salt and water retention.

2- Allergy.

3- Viral infection.

4- Autoimmune.

5- 5- Autonomic imbalance increase sympathetic activity vasospasm accumulation of metabolites, Vasodilatation excessive fluid formation

Clinical picture :- 1- Recurrent attack of the following triad.

2- Vertigo few minutes to few hours.

3- Deafness SNHL low tone fluctuant.

4- Tinnitus (Associated with nausea, vomiting and nastagmous).

37- Treatment of menieares disease :-

1- Complete bed rest.
2- Sedatives.
3- Anti-emetics
4- Salt and water restriction
5- Diuretics frusemid (Lasix
6- Vasodilator Betahistine (Betaserc).
7- Antivertigo (Dramamin).
8- Streptomycin destroy both vestibul
9- Surgical . .

.

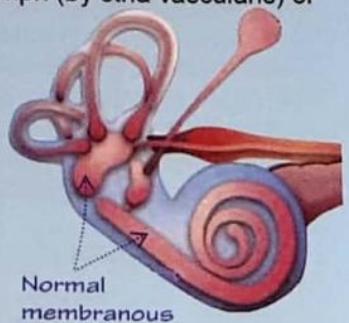
Meniere's disease (Endolymphatic hydrops) سؤال اختبار

Distension of the membranous labyrinth with endolymph, characterized by recurrent attacks of ***vertigo***, ***deafness*** *and* ***tinnitus*** *(± ear fullness).*

• **CAUSES:** It is due to either excessive formation of endolymph (by stria vascularis) or lack of its drainage (by endolymphatic sac).

-The exact cause is unknown but may be:

1- Autoimmune.
2- Viral infection.
3- Allergy.
4- Salt and water retention.
5- Sympathetic overtone.



• **INCIDENCE:**

-Usually unilateral (bilateral in 25%).
-Equal in males and females.
-Usually around the age of 50 years.

• **CLINICAL PICTURE:**

Recurrent attacks of the following triad:

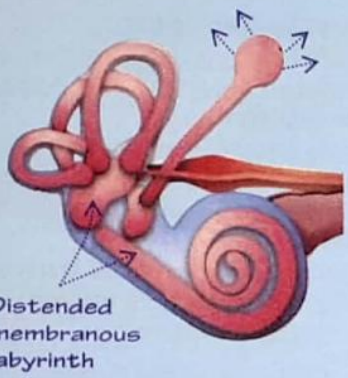
- Vertigo:

. Lasts few minutes to few hours.
. Inbetween the attacks → the patient is normal
. Associated with nausea, vomiting and nystagmus.

- Deafness: SNHL (low tone), which is flactuant, with hypersensitivity to loud sound (+ve Recruitment)

- Tinnitus.

N.B. *Sensation of ear fullness is present in most patients.*



• **INVESTIGATIONS:**

1- Audiological investigations:

. PTA (fluctuant SNHL, mainly in low tone)
. Glycerol test is +ve *(glycerol is diuretic)*: hearing is better *(by PTA)* after intake of glycerol.
. Electrocochleagraphy: may be helpful (see chapter of audiology).

2- Vestibular investigations:

Caloric test shows reduced caloric response on affected side *(done after the attack).*

• **TREATMENT:**

- Medical treatment:

A- During the attack:
- Complete bed rest.
- Antivertigo drugs: as Dramamine.
- Antiemetics as chlorpromazine.

B- In between the attacks:
- Salt restriction.
- Diuretics as frusemide (lasix)
- Vasodilator: Betahistidine
- Streptomycine (medical labyrinthectomy): in toxic doses (in bilateral severe SNHL).

- Surgical treatment:

- If hearing is bad → Intra-tympanic injection of aminoglycoside or surgical labyrinthectomy.
- If hearing is good → Endolymphatic sac decompression (removal of bone around the endolymphatic sac), and if failed vestibular neurectomy *(cutting the nerve)* is performed.

✓ *Recurrent attacks of vertigo, deafness and tinnitus (± ear fullness) = ? Meniere's disease*

38- Tympanometry :-

Type A :- Normal Middle ear.
Type B :- Flat" Middle ear effusion
Type C :- Eustachian tube.
Type As :- Oto-sclerosis.

. Type Ad :- Ossicular disruption.

39- Write the diagnosis of :-

A- Low frequency SNHL :- Meniere's disease.

B- High frequency SNHL :- Pres-bycusis.

C- Frequency of 4000hz :- Noise induce SNHL.

D- Sauccer (U-shaped) :- Congenital SNHL.

40- Causes of deafness related to each types of hearing loss :-

1- C.H.L :- Lesion in External or Middle ear.

2- S.N.H.L :- Lesion in inner ear, Cochlear nerve.

3- M.H.L :- Lesion causing C.H.L and S.N.H.L.

4- Psychogenic hearing loss (Hystrical)

41- Types of hearing loss with their interpretation in pure tone audiometery :-

1- Sensori-neural hearing loss.

2- Conductive hearing loss.

3- Mixed hearing loss.

42- Types of hearing loss and their representation on audiogram :- مكرر

1- Sensori-neural hearing loss.

2- Conductive hearing loss.

3- Mixed hearing loss.

43- Give account in sensory hearing loss in post kernectous :-

.....

44- Pure tone audiometery (PTA) :-

Is the key hearing test used to identify hearing threshold levels of an individual, enabling determination of :-

①the degree,

②type

③configuration of a hearing loss.

Thus, providing the basis for diagnosis and management.

PTA is a subjective, behavioural measurement of hearing threshold, as it relies on patient response to pure tone stimuli.

45- Function of wax :-

1- Contain lysosmal enzyme acts as anti-bacterial.
2- Lubrication.
3- Troping of particles.

Ear Wax

It is a normal secretion of ceruminous and sebaceous glands (from outer $^1/_3$ of EAC)

N.B.: it is usually cleared spontaneously by epithelial migration.

Clinical picture:

. Symptoms: if impacted (especially after bathing or swimming), leads to:

- Deafness: (CHL)
- Tinnitus.

. Signs: Dark brown (hard) or yellowish (soft) wax seen by otoscope.

Treatment:

Ear wash (If it is hard, it should be softened by glycerin bicarbonate or H_2O_2 ear drops before wash).

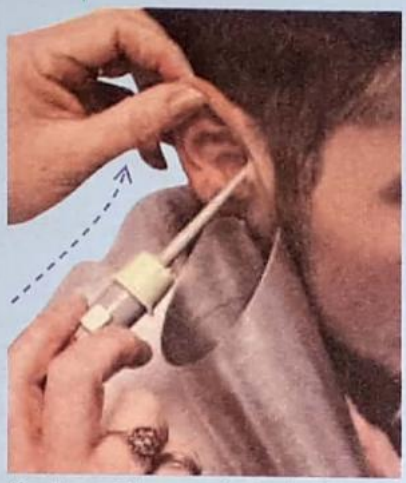
Ear wax in EAC

مكر

Ear Wash سؤال مهم قد يكون

• Indications:

- Wax (if excessive or impacted):
It is softened by glycerin bicabontae if it was hard.
- FB (not impacted and not vegetable).
- Otomycosis (Fungal mass): suction is preferred.
- Caloric test: to test the vestibular function (see vertigo in symptomatology chapter).



• Contraindications:

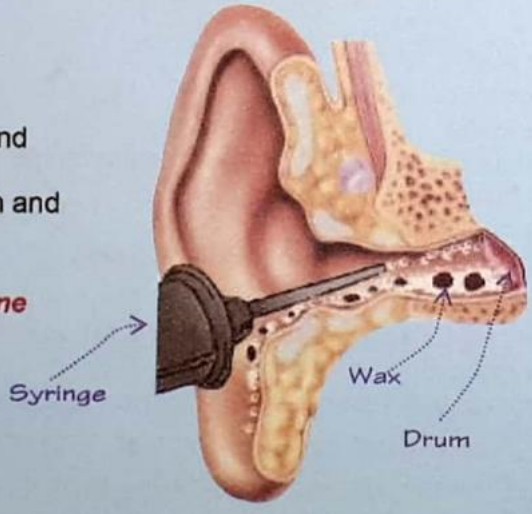
- Perforation (traumatic or pathological i.e. CSOM).
- FB (impacted or vegetable).
- Otitis externa (bacterial or viral).

• Technique:

- The patient should be seated with a towel covering his clothes.
- A syringe filled with warm water (about 37° to avoid vertigo) and its nozzle is directed postero-superior (to avoid injury of the drum), after wash dry the EAC with alcohol.

• Complications: 2 I + 2 S

1- **I**njury to: EAC or Drum (Rupture).
2- **I**nfection to: EAC (Otitis Externa) or ME (Otitis Media) after rupture of the drum.
3- **S**timulation of inner ear leads to vertigo and nystagmus.
4- **S**timulation of vagus leads to reflex cough and vaso-vagal attack.



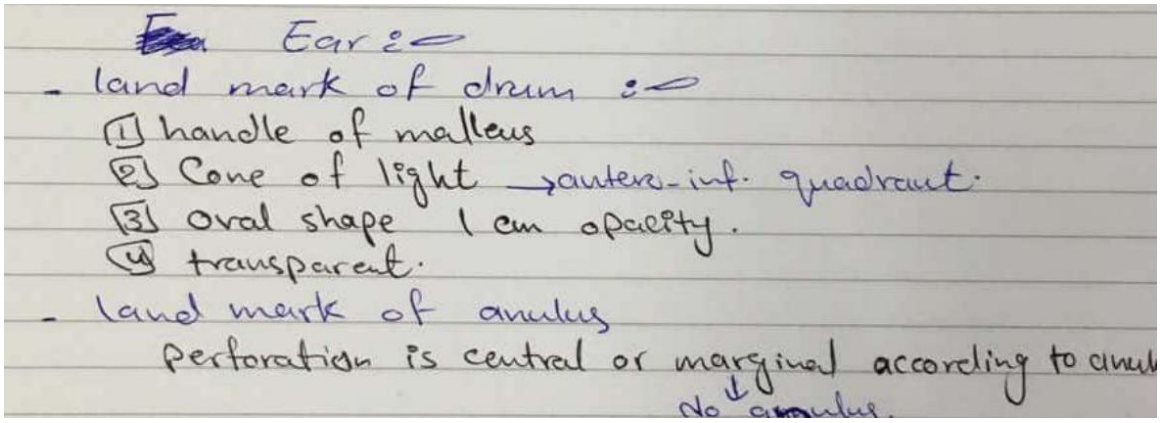
N.B. Manifestations of tympanic membrane rupture during ear wash:

- *Sudden pain.*
- *Bleeding.*
- *Deafness and tinnitus.*
- *Fluid trickling in the throat.*

46- What is the second tympanic membrane? And Membrane that closes the oval window :-

47- Landmarks of drum :-

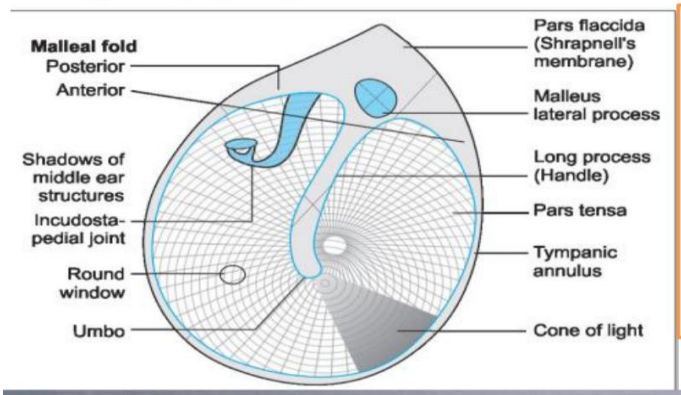
48- Normal appearance of ear drum :-


Ear :
- land mark of drum :
1 handle of malleus
2 Cone of light → antero-inf. quadrant.
3 oval shape 1 cm opacity.
4 transparent.
- land mark of annulus
perforation is central or marginal according to annu
↓
no annulus.

49- Manifestation of normal ear drum :-

TYMPANIC MEMBRANE (FIG. 1.2)

- It is the partition between external acoustic meatus and middle ear, i.e. it lies at medial end of external auditory meatus
- Tympanic membrane is 9–10 mm tall, 8–9 mm wide and 0.1 mm thick and is positioned at angle of 55° to floor.
- Area of adult tympanic membrane is 90mm² of which only 55 mm² is functional.
- It is shiny and pearly gray[Q] in color.
- Normal tympanic membrane is mobile with maximum mobility being in the peripheral part.[Q]



-Most depression area ⇒umbo like umblical in human

-q) high pressue ⇒destration para densa before para flasida

q) in children more thick of tympanic membrance ⇒due to narrow or ring ⇒ present of rupture in tympic membrance in adult more than children (due thick more in children) but mastitis more in children if pus can no rupture tympanic membrane⇒to to brain .

concave --> عندما تنظر من خارج
convix (عندما تنظر من داخل)

C- *Tympanic membrane (TM, Drum):*

- It is oval in shape, 9 x 8 mm, pearly white in colour, concave, surrounded by fibrous ring called tympanic annulus (deficient above) which is lodged in the tympanic sulcus, oblique (55° with the floor). يعمل زاوية مع السطح
- It is formed of 2 parts:

1-Pars flaccida: it is the upper flaccid part, which has no fibrous layer and not surrounded by fibrous annulus.

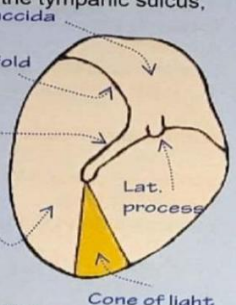
2-Pars tensa: it is the lower tense part, which has a fibrous layer and surrounded by fibrous annulus.

- Layers of the drum:

1-Outer epithelial layer (skin): continuous with that of external auditory canal.

2-Middle fibrous layer: formed of circular and radial layers, not present in the pars flaccida. The handle of malleus embedded in this layer.

3-Inner mucosal layer: continuous with that of the middle ear.



N.B. *The drum is 0.1 mm in thickness in adults but it is thicker in children.*

N.B. *The cone of light appears during examination in the antero-inferior part due to the oblique position of the drum (55° with the floor). So, this part reflects the light of otoscope as a cone.*

50- Pathological perforation of drum :-

51- Perforation of tympanic membrane :-

52- D.D of traumatic and pathologic perforation of tympanic membrane :-

53- Treatment of traumatic perforation of tympanic membrane :

Traumatic rupture of the drum

• **AETIOLOGY:**

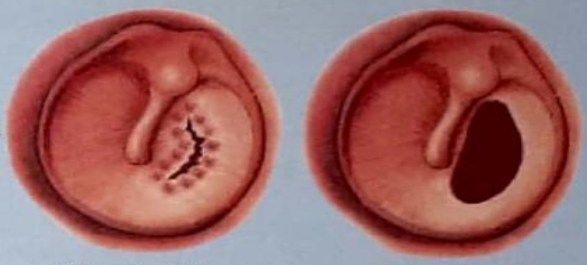
1- Indirect trauma:
- Slap: Trauma to ear by the palm of the hand.
- Otitic barotrauma.
- Blast injury (explosion).

2- Direct trauma:
- Self inflected.
- Iatrogenic: during ear wash or removal of FB.
- Fracture base of the skull.

• **CLINICAL PICTURE:**

* Symptoms: History of trauma with:
- Pain: at the time of rupture.
- Deafness and tinnitus.
- Bleeding: slight (except in fracture base).
- Whistling sound on blowing of the nose.

* Signs:
▪ Otoscopy:
- EAC: may show blood clots
- Drum: shows perforation, which is:



Traumatic Pathological

central in the pars tensa, has thin irregular edge, surrounded by blood clots.
▪ Tuning Fork tests: CHL (BC > AC).

DIFFERENTIAL DIAGNOSIS: from pathological perforation: سؤال اختبار

	Traumatic	Pathological
* History	Trauma	Otitis media
* Discharge	Absent	Present
* Bleeding	Present	Sometimes present.
* Perforation		
Type	Central	Central, marginal or attic
Size	Small	Any size
Site	Pars tensa	Any where
Shape	Irregular	Regular
Edge	Thin surrounded by clot	Thick and not surrounded by clot.
* ME Mucosa	Normal (dry)	May be congested.

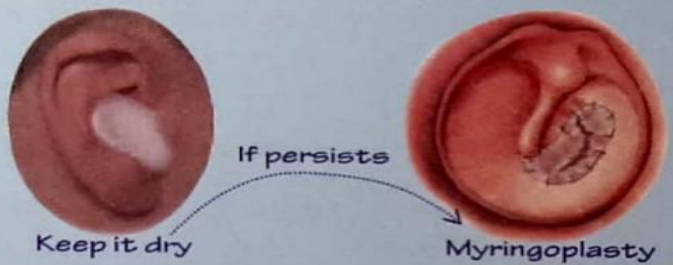
N.B. *If traumatic perforation is infected, it is very difficult to differentiate.*

• **TREATMENT:**

a- Medical (conservative):

Avoid 2:
Wetting of ear (i.e. keep it dry).
Blowing of nose.

Give 2:
Systemic antibiotics.
Decongestant nasal drops.



N.B.: Spontaneous healing is expected in about one month (except if infected).

b- Surgical:
Myringoplasty is indicated after failure of medical treatment for 3 - 6 months.

types of perforation

Centeral
- pin point
- kidney shape
- subtotal

marginal
total perforation of annulus.

54- Congenital causes of SNHL :-

سؤال اختبار

Sensorineural Hearing Loss (SNHL)

Deafness due to lesion in the inner ear (Cochlear) and/or its central connection (Retrocochlear), which is the nerve and central connection of hearing.

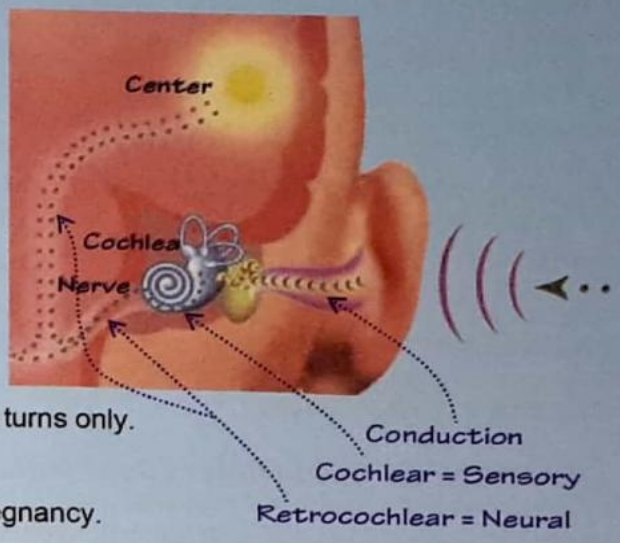
Causes:

I - Peripheral causes:

(A) Cochlear (inner ear) lesions:

1- Congenital: may be

- **Hereditary**: due to genetic factors
- Syndromic: AUP
- **A**lport's syndrome: SNHL +Nephritis.
- **U**sher's syndrome : SNHL + Retinitis pigmentosa.
- **P**endred's syndrome: SNHL+ Goiter.
- Non-syndromic:
- Mondini's disease: the cochlea is 1½ turns only.



- **Acquired**: due to external factors
- Prenatal: Rubella
  Ototoxic drugs during pregnancy.
- Natal: Birth trauma.
  Hypoxia.
- Postnatal: Neonatal jaundice.
  Neonatal infection as meningitis.

2- Traumatic:

a- Physical trauma:
- Acute acoustic trauma: as explosion.
- Chronic acoustic trauma: prolonged exposure to noise.

b- Mechanical trauma:
- Surgical: Perilymph fistula.
- Accidental: Fracture base (transverse type).

3- Inflammatory: labyrinthitis either viral or bacterial

4- Ototoxicity: ototoxic drugs as aminoglycosides, diuretics, salicylates, quinine and chemotherapy.

5- Vascular: thrombosis of internal auditory artery.

6- Miscellaneous:

a- Meniere's disease.

b- Senile deafness (presbyacusis): deafness in old age, due to degeneration of the organ of Corti and/or cochlear nerve fibers.

c- Cochlear otosclerosis: rare.

(B) Cochlear nerve lesions: compression in CPA by
- Acoustic neuroma.
- Meningioma.
- Congenital cholesteatoma.

II- Central lesions:

a- Traumatic: Head trauma.

b- Inflammatory: Meningitis and encephalitis.

c- Neoplastic: Brain tumour.

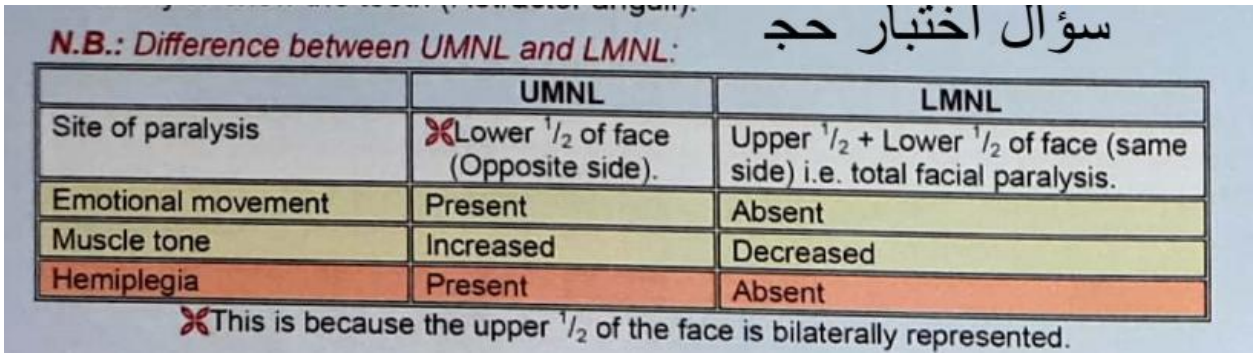
d- Vascular: The (**T**hrombosis, **h**aemorrhage, **e**mbolism).

e- Degenerative: Multiple sclerosis (MS).

N.B. The commonest cause of SNHL is presbyacusis.

N.B. Sudden SNHL may occur in traumatic, vascular or autoimmune diseases.

55- How to differentiate between upper and lower motor facial nerve paralysis :-



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***N.B.:** Difference between UMNL and LMNL:*

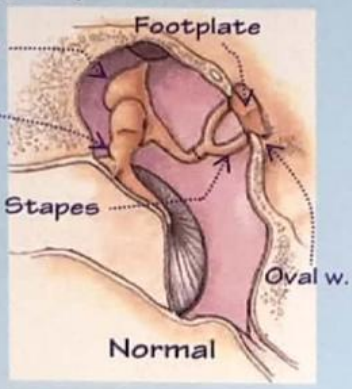
	UMNL	LMNL
Site of paralysis	✂Lower $^1/_2$ of face (Opposite side).	Upper $^1/_2$ + Lower $^1/_2$ of face (same side) i.e. total facial paralysis.
Emotional movement	Present	Absent
Muscle tone	Increased	Decreased
Hemiplegia	Present	Absent

✂This is because the upper $^1/_2$ of the face is bilaterally represented.

56)osteosclerosis sign + treatment ?

Otosclerosis

Hereditary localized disease of the otic capsule (bony labyrinth) characterized by replacement of normal compact bone by spongy bone (Otospongiosis) of increased cellularity, vascularity and thickness.



• **CAUSES:** Unknown but may be Hereditary

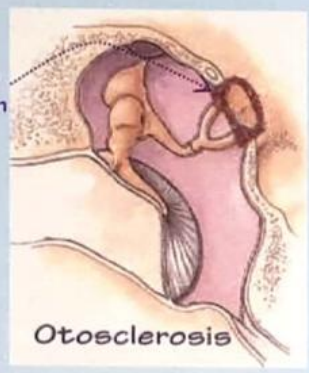
• **TYPES:**

1-Stapedial: (it is the commonest type).
Occurs around the footplate of the stapes leading to its fixation (ankylosis) and CHL

2-Cochlear: (rare)
In the cochlea leading to SNHL and vertigo.

3-Mixed (combined): Both leads to mixed hearing loss ± vertigo.

• **INCIDENCE:**
- Usually bilateral (unilateral in 15%).
- More common in females.
- Middle age



• **CLINICAL PICTURE:**

* Symptoms:
- Deafness: (usually bilateral)
Associated with paracusis willicii phenomenon (i.e. hearing is better in noisy places).
- Tinnitus.
- Vertigo (rare): in cochlear and mixed otosclerosis.

* Signs:
- Otoscopy: normal TM in most cases, sometimes (rare) the drum may be flamingo-red in colour in the active stage (Schwartz sign).
- Tuning Fork Tests: CHL in stapedial type or SNHL in cochlear type.

• **INVESTIGATIONS:**
- PTA: CHL, SNHL, or Mixed HL.
- Tympanometry: type As curve [normal (A) but stunted (s) curve], due to stiffness of the drum caused by stapedial fixation (see chapter of audiology).
- Acoustic (stapedial) reflex: no response (see chapter of audiology).

• **DIFFERENTIAL DIAGNOSIS** from other causes of CHL with intact tympanic membrane
1- Osteogenesis imperfecta: CHL, blue sclera, and multiple fractures.
2- Secretory OM, Adhesive OM, congenital stapedial fixation, and tympanosclerosis.

• **TREATMENT:**

- No treatment:
If the air-bone gap (on PTA) is less than 20 dB.

- Surgical treatment:
Stapedectomy, it is treatment of choice, partial removal of stapes (making a hole in footplate) and replacement with teflon piston or wire and fat (see operations).

- Medical treatment: Sodium fluoride, used if
. The operation is contra-indicated.
. SNHL (cochlear type).
. +ve Schwartz sign (↑ Vascularity).

- Hearing aid: in severe SNHL.

✓ *Bilateral CHL and tinnitus with normal TM (usually female in middle age) = ? Otosclerosis*

57- Gradenigo's triad :-

1- Discharge ear. 2- Facial pain. 3- Diplopia.

58- Gressenger's sign :-

Tenderness behind the ear (important).

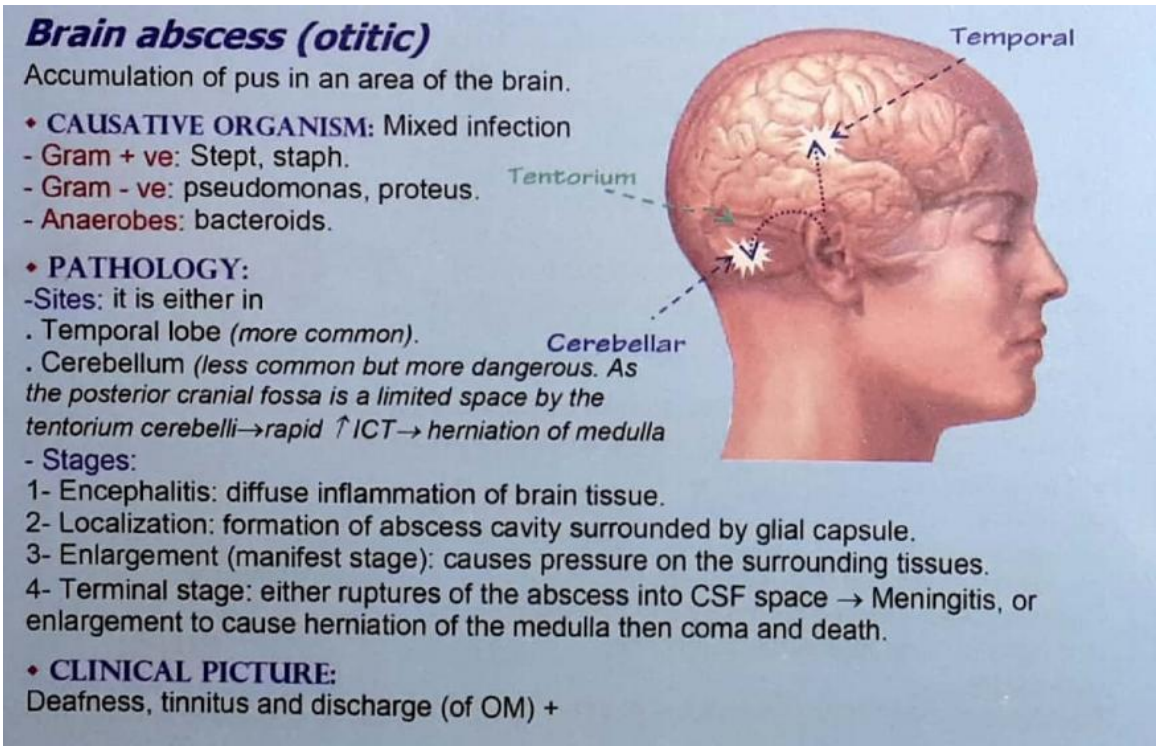
59- Gradenigo's syndrome :- سؤال مكرر

1- Discharge. 2- Trigeminal pain.

3- 5th CN palsy (facial pain). 4- 6th CN palsy (diplopia and squint).

60- types of brain abscess as complication of otitis media :-

61**- Manifestation of brain abscess :-**


Brain abscess (otitic)
Accumulation of pus in an area of the brain.
• CAUSATIVE ORGANISM: Mixed infection
- Gram + ve: Stept, staph.
- Gram - ve: pseudomonas, proteus.
- Anaerobes: bacteroids.
• PATHOLOGY:
-Sites: it is either in
. Temporal lobe (more common).
. Cerebellum (less common but more dangerous. As the posterior cranial fossa is a limited space by the tentorium cerebelli→rapid ↑ICT→ herniation of medulla
- Stages:
1- Encephalitis: diffuse inflammation of brain tissue.
2- Localization: formation of abscess cavity surrounded by glial capsule.
3- Enlargement (manifest stage): causes pressure on the surrounding tissues.
4- Terminal stage: either ruptures of the abscess into CSF space → Meningitis, or enlargement to cause herniation of the medulla then coma and death.
• CLINICAL PICTURE:
Deafness, tinnitus and discharge (of OM) +
Temporal
Tentorium
Cerebellar

1-Manifestations of increased intracranial tension (ICT):

* Headache: severe and persistent.
* Vomiting: projectile.
* Blurring of vision.
* Papilloedema.

2-Manifestations of focal neurological defects:

Caused by pressure of the abscess on the surrounding area (according to its site).

*__Temporal lobe abscess__: *AHHH*

- **A**phasia: due to pressure on speech area (in dominant hemisphere).
- Contralateral **H**emiplegia (Motor area).
- Contralateral **H**emianaesthesia (Sensory area).
- Homonymous **H**emianopia (Optic radiation).

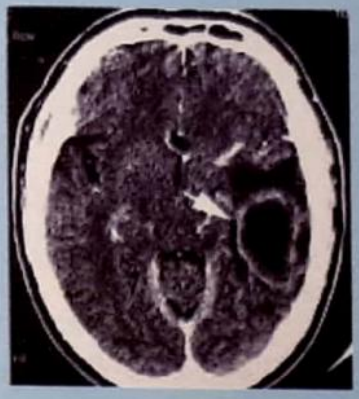
*__Cerebellar abscess__: *AHMID + NSR*

- **A**taxia.
- **H**ypotonia.
- **M**uscle incoordination.
- **I**ntention kinetic tremors.
- **D**ysdiadokokinesia (inability to do fine repeated movements).
- **N**ystagmus.
- **S**taccato speech (interrupted explosive speech).
- **R**omberogism (tendency to fall to the diseased side)

• **INVESTIGATIONS:** either

- **CT** with contrast: to detect the site and size of abscess.
- **MRI**: it is more diagnostic.

MRI: Cerebellar abscess



CT: Temporal lobe abscess

• **TREATMENT:**

a) Medical:

- Hospitalization.
- Systemic antibiotics: Those cross the blood brain barrier as:
  * Sulphonamide I.V. drips.
  * Chloramphenicol I.V. or I.M.
  * 3rd or 4th generation Cephalosporin I.V. or I.M.
  * Metronidazole I.V. drips: for anaerobes.
- Dehydrating measure (to ↓ ICT): by one or more of the following: Mannitol 20% I.V. drip, Lasix I.V., Glucose 25% I.V. drip, or even repeated lumbar puncture.

b) Surgical:

- Management of abscess by:

62- Treatment of attico-antralsuppurative otitis media :-

- The Treatment is Surgical. - The classic Treatment is Radio-mastoid-ectomy.

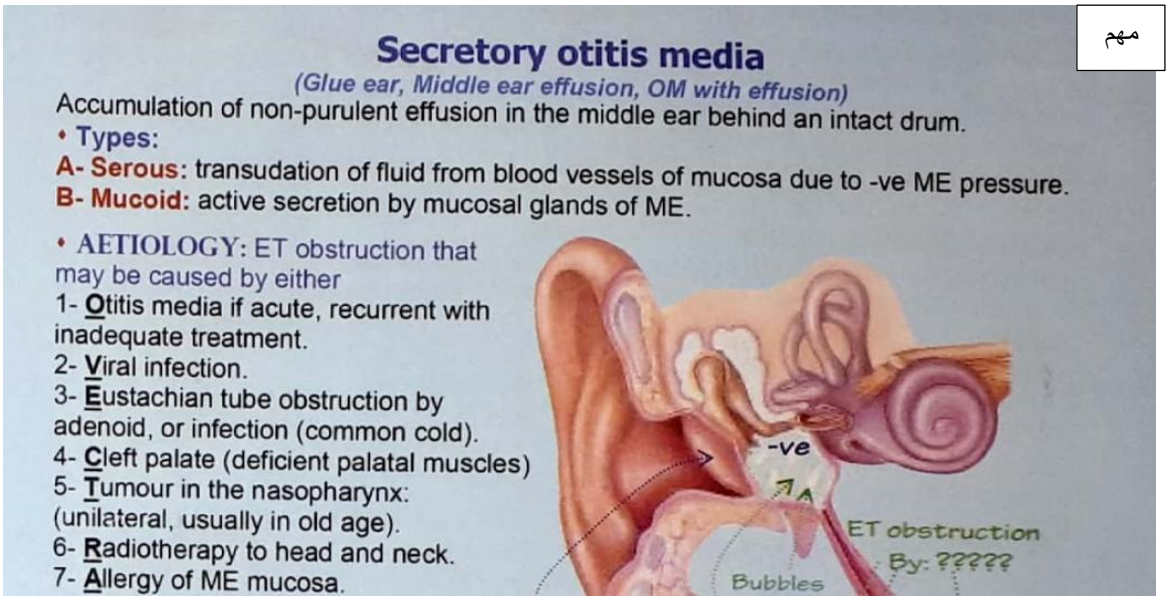
63- Treatment of secretory otitis media :-

A- Medical :-

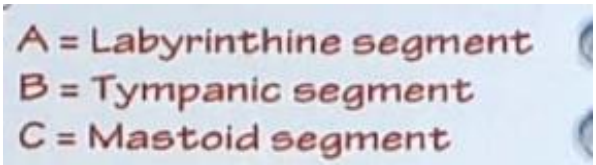
1- Treatment of cause :- infections or adenoid
2- Systemic Antibiotic :- To prevent recurrent infection.
3- Steroids.
4- Mucolytics :- To dissolve mucoid secretion.
5- Decongestant nasal drop :- To open E.T.

B- Surgical :- if the medical failed. → Myringo-tomy.

مهم


Secretory otitis media
(Glue ear, Middle ear effusion, OM with effusion)
Accumulation of non-purulent effusion in the middle ear behind an intact drum.
• Types:
A- Serous: transudation of fluid from blood vessels of mucosa due to -ve ME pressure.
B- Mucoid: active secretion by mucosal glands of ME.
• AETIOLOGY: ET obstruction that may be caused by either
1- Otitis media if acute, recurrent with inadequate treatment.
2- Viral infection.
3- Eustachian tube obstruction by adenoid, or infection (common cold).
4- Cleft palate (deficient palatal muscles)
5- Tumour in the nasopharynx: (unilateral, usually in old age).
6- Radiotherapy to head and neck.
7- Allergy of ME mucosa.
-ve
ET obstruction
By: ?????
Bubbles

64- Segments of facial nerve :-



65- Facial nerve paralysis (Etiology and clinical types) :-

FACIAL NERVE PARALYSIS

• **Aetiology:**

A) Upper motor neuron lesion (UMNL): above the level of the nucleus i.e. central
- Traumatic: Head trauma.
- Inflammatory: Meningitis - encephalitis.
- Vascular: Thrombosis, haemorrhage, or embolism (The).
- Neoplastic: brain tumour.
- Degenerative: Multiple sclerosis.

B) Lower motor neuron lesion (LMNL): at or below the level of the nucleus.

1- Pontine lesions: i.e. nuclear (the causes are the same as central causes)

2- CPA lesions:
- Acoustic neuroma.
- Meningioma.
- Congenital cholesteatoma.
- Arachnoid cyst.

3- Cranial (Otogenic) lesions:
i.e. in the temporal bone ***(TITI)***

* ***Idiopathic:*** Bell's plasy (the commonest cause).

* ***Traumatic:***
- Surgical: ear operations.
- Accidental: fracture base *(transverse or longitudinal)*.

* ***Inflammatory:***
- AOM (in dehiscent facial bony canal).
- CSOM (in cholesteatoma eroding facial canal).
- Malignant Otitis Externa.
- Ramsay Hunt syndrome.

* ***Tumour:***
- Glomus.
- Squamous cell carcinoma of middle ear.
- Acoustic neuroma.

4- Extracranial (TIT):

* ***Traumatic:***
- Surgical → parotid surgery.
- Accidental → stab in parotid.

* ***Inflammatory:*** Sarcoidosis.

* ***Tumour:*** parotid tumour.

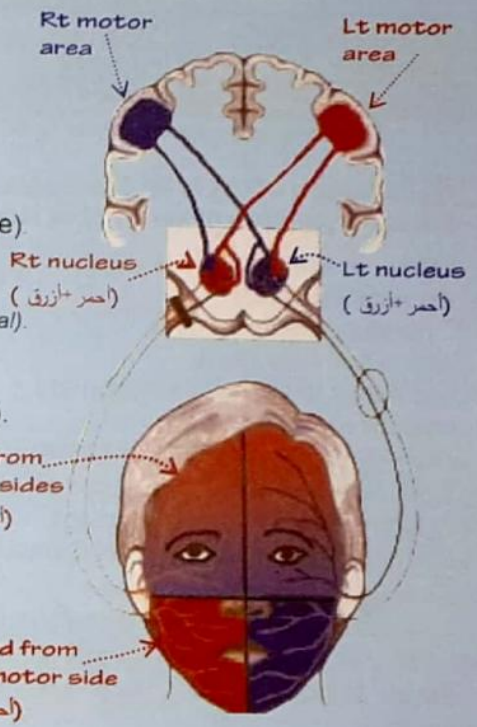
5- Miscellaneous:
- Peripheral neuritis.
- Guilliane- Barre syndrome: ascending polyneuritis.
- Milkersson Rosenthal syndrome: It is a familial facial paralysis with facio-labial oedema, and fissured tongue.

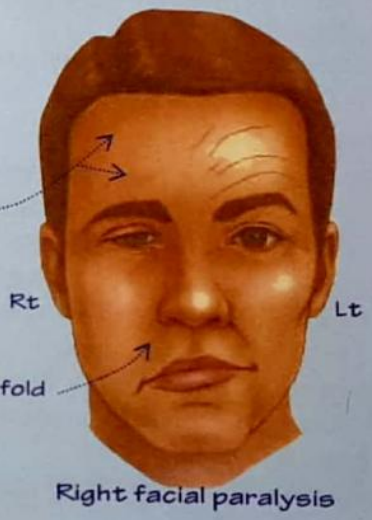
• **Clinical picture:** of LMNL

Symptoms:
- Inability to close the eye (on affected side)
- Deviation of mouth (to the healthy side)
- Accumulation of food behind cheek (on affected side).

Signs:

* *Inspection:*
- Loss of corrugation of forehead (on affected side)
- Obliteration of nasolabial fold (on affected side).





66- Causes of bad smell discharge from ear :-

1- Unsafe chronic suppurotiveotitis media (Unsafe CSOM).

2- Malignant otitis externa.

67- Common site of discontinuity in ossicles :-

The junction between ancus and malleulus.

68- Patient with anterior perforation and another with posterior one who hears better and Why :-

The anterior (explain it by hearing physiology).

69- Definition cone of light :-

70- Post auricular swelling :-

71- D.D of swelling behind the ear :-

72- Tumours of external canal :-

Note :-

- **Alport syndrome** = SNHL + Nephtitis.
- **Usher's syndrome** = SNHL + Retinitis pigmentosa.
- **Peodred's syndrome** = SNHL + Gorter.
- **Mondinits disease** = cochlea is single form.
- **Alkaline F.B** ==> Liquifactive necrosis.
- **Acidic F.B** ==> Coagulative necrosis.

- **Dehecent of facial canal** (MCC congenital anomalies of middle ear)

The most common site of chronic otitis media is the lateral semicircular canal (MCQ)

73- Causes of blue tympanic membrane :-

1- Hemo-tympanum. 2- High jugular bulb. 3- Carotid aneurysm.

4- Glue ear (Secretory otitis media). 5- Glomus tumor.

74- D.D of traumatic and pathologic perforation of tympanic membrane :-

75- Treatment of traumatic perforation of tympanic membrane :-

76 Causes of SNHL :-

77- Congenital causes of SNHL :-

78- CHL and SNHL differentiation :-

79- Grommets tube :-

(Also called Tempanostomy tube or Ventilation tube) are tiny tubes that can be inserted into the eardrums to treat conditions that affect the middle ear, such as Recurrent middle ear infections and glue ear.

80- T- tube :-

Permanent ventilation tube.

81- Landmarks of drum :- مكرر

①Gray-yellowish colour.
②Semi-transparent.
③Anterior and posterior malleular fold(ligament).
④Handle of malleus.
⑤Umbo.
⑥Movement of drum by valsalva's maneuver.).
⑦Cone of light(Oval shape 9x̀8m
⑧Annular.
⑨Oblique position.

82- Normal appearance of ear drum :-

83- What is the second tympanic membrane? And Membrane that closes the oval window :-

84- Manifestation of normal ear drum :-

85- Pathological perforation of drum :-

86- Perforation of tympanic membrane :-

1- Change in air pressure. 2- By fluid.

3- By solid objects. 4- By direct trauma.

90- Give account in sensory hearing loss in post kernicterus :-

91- Pure tone audiometery (PTA) :-

Is the key hearing test used to identify hearing threshold levels of an individual, enabling determination of the degree, type and configuration of a hearing loss.

Thus, providing the basis for diagnosis and management.

PTA is a subjective, behavioural measurement of hearing threshold, as it relies on patient response to pure tone stimuli.

92- Acute Mastoditis :-

Acute Mastoiditis سؤال اختبار

Acute inflammation of mastoid antrum and air cells with destruction of their bony partitions.

• **PATHOLOGY:**

a. Destruction of bony partitions between mastoid air cells → large cavity filled with pus.

b. Extension of infection under the periosteum:

1-Post-auricular (mastoid) abscess: Lateral extension from antrum.

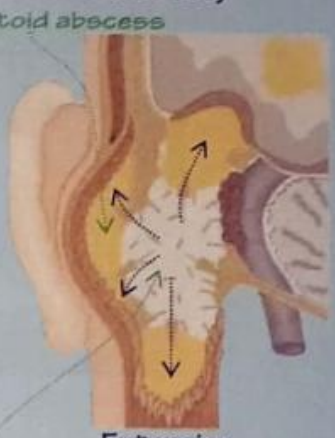
2-**Sagging** of postero-superior meatal wall: Anterior extension from antrum *(it **is a diagnostic sign** [1])*.

3-Zygomatic abscess: Lateral extension from zygomatic air cells.

4-Bezold's abscess: Inferior extension along the sternomastoid muscle sheath.

5-Citteli's abscess: Inferior extension along the digastric muscle sheath.

c. Rupture of periosteum and skin with fistula formation.



• **CLINICAL PICTURE:**

Symptoms:

General: fever, headache and malaise.

Local:

- Deafness, tinnitus and discharge (of otitis media).
- Pain: post-auricular (become throbbing on abscess formation).
- Swelling: in abscess formation.

Signs:

- **General:** High temperature.
  Rapid pulse (tachycardia).
- **Local:**

Ear examination:

* Otoscopy:

- Discharge: profuse and recollect rapidly after suction (It is called **Reservoir sign** *which **is a diagnostic sign [2]***).
- Sagging of postero-superior meatal wall *(diagnostic sign)*.
- Perforated drum (may be intact and congested in infants).

Mastoid Examination:

- **Swelling:** either

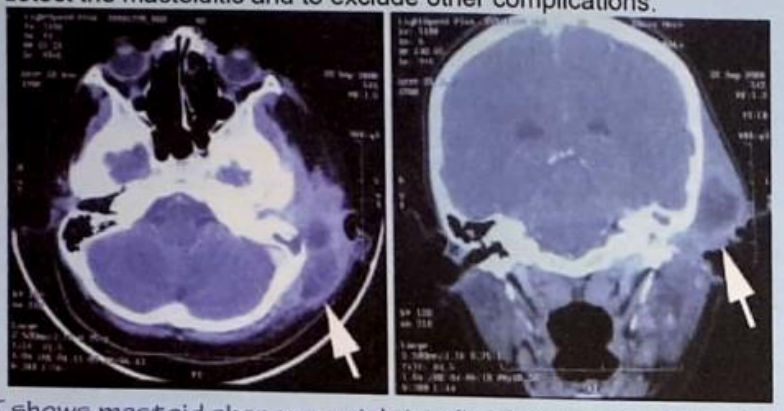
* Post-auricular abscess: pushing the auricle downwards and forwards.
* Zygomatic abscess: above and infront of auricle at root of zygomatic process.
* Bezold's abscess: in upper lateral part of the neck (rare).
* Citteli's abscess: in submandibular region (rare).

-**Tenderness**: over the antrum (marked by cymba concha), tip of mastoid and posterior border (as these are the most superficial air cells).

• **INVESTIGATIONS:**

- PTA: CHL.
- Culture and sensitivity of discharge.
- X-ray mastoid → clouding (opacity) of mastoid air cells.

- CT → to detect the mastoiditis and to exclude other complications.



CT shows mastoid abscess: axial view (left) and coronal view (right)

• TREATMENT:

A) Medical:

- Hospitalization.
- Systemic antibiotics according to culture and sensitivity.
- Analgesic antipyretic.
- Frequent suction of discharge and local antibiotic ear drops.

B) Surgical: *drainage by*

Cortical mastoidectomy: if the medical treatment failed (for 48 hours), if there is abscess and if associated with other complication (also myringotomy is needed in children).

N.B. *Radical mastoidectomy is needed if it was associated with cholesteatoma (either in the same stage during abscess drainage or after subsidence of infection 2 weeks later)*

N.B. ***Differential diagnosis of Mastoiditis***

(a) Furuncle:

	Furuncle	Mastoiditis
History:	Scratch	Otitis media
Pain:	On mastication	Not related to mastication
Deafness:	if it occludes the EAC (not severe)	Usually present and severe.
Tenderness:	Over the tragus	Over mastoid.
Discharge:	Scanty, purulent and cheesy.	Profuse, Mucopurulent with +ve Reservoir sign.
Swelling:	In outer $^1/_3$ of EAC.	Deep in the posteor-superior part of EAC (Sagging).
Post. auricular groove	Obliterated (due to lymphadenitis)	Preserved (the lesion is subperiosteal)
Drum:	Normal	Usually perforated *(congested in infants)*
X-ray mastoid:	Normal	Clouding of air cells.

(b) Post-auricular lymphadenitis: *due to scalp infection.*

93- Reservoir signs :-

Signs of the discharge in mastoiditis, when it clean it rapid reforms.

94- MacEwen's triangle :-

Is a surgical landmark for mastoid antru
Sup ==> supra-mental crest,
ant. ==> Posterior-superior meatal wall.
Posterior ==> Trigeminal line to post meatal wall.

95- Schwartz operation :-

Cortical mastoidectomy to clean antrum in treatment of COSM.

96- Write the diagnosis of :- مكرر هذا السؤال

A- Low frequency SNHL :- Meniere's disease.

B- High frequency SNHL :- Pres-bycusis.

C- Frequency of 4000hz :- Noise induce SNHL.

D- Sauccer (U-shaped) :- Congenital SNHL.

97- Causes of deafness related to each types of hearing loss : - مكرر هذا السؤال

1- C.H.L :- Lesion in External or Middle ear.

2- S.N.H.L :- Lesion in inner ear, Cochlear nerve.

3- M.H.L :- Lesion causing C.H.L and S.N.H.L.

4- Psychogenic hearing loss (Hystrical).

99- Types of hearing loss with their interpretation in pure tone audiometery:- مكرر هذا السؤال

1- Sensori-neural hearing loss. 2- Conductive hearing loss.

3- Mixed hearing loss.

100- Types of hearing loss and their representation on audiogram :- مكرر هذا السؤال

1- Sensori-neural hearing loss. 2- Conductive hearing loss.

اسئلة الدكاتره من تجارب الطلاب للدفع السابقة

Q1) pathoway of otits media complication ?

-سؤال الدكتور عادل الغيلي

-جواب سؤال 28

Q2) congential hering loss ?

-سؤال الدكتور عبدالوهاب نصر

-جواب السؤال 54

Q3)types otits externa ?

-سؤال الدكتور عبدالوهاب نصر

-جواب سؤال 19

Q4) classification otitis media?

-سؤال الدكتور عبدالوهاب نصر

-جواب سؤال 17

Q4) cause ear office discharge ?

-سؤالد الدكتور عبيد

-جواب السؤال 11

Q5)cranial complication otits media ؟

- سؤال الدكتور عبيد
- جواب السؤال 28

Q6) tramautic perforation of drump (causes + cp+ tt)

-سؤال الدكتور عبيد

-جواب السؤال 50

Q7) osteosclerosis sign + treatment ?

-سؤال الدكتور عبيد

-جواب السؤال 56

Q8)Ear wash Indication Contraindication Complication → جواب 16+ 45

Q9)Barotrauma ? 33 جواب سؤال

Nose

1- Openining of paranasal sinuses :-

A- Anterior gr
B- oup :-

1- Frontal.

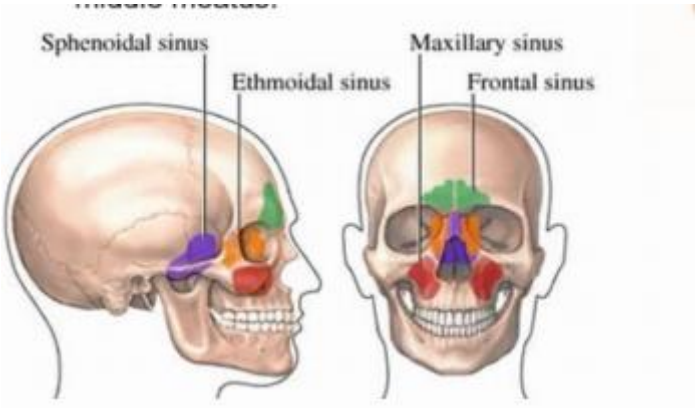
2- Maxillary.

3- Anterior ethmoid.

B- Posterior group :-

1- Posterior ethmoid.

2- Sphenoid.



2- Lateral wall of nasal cavity :-

1- The turbinates :- Three or sometimes four bony shelves covered by erectile mucosa, project from the lateral wall of the nose.

2- A series of spaces are created by the overhanging edge of these turbinates.

a- Inferior Meatus :- - Inferior to the inferior turbinate.

- Contains orifice of nasolacrimal duct.

b- Middle Meatus :- - Inferior to the middle turbinate.

- Contains semilunar hiatus, with openings of the maxillary, frontal, anterior ethmoidal sinuses.

c- Superior Meatus :- Drains posterior ethmoid cells.

d- Spheno-ethmoid recess :- Orifice of sphenoid sinus.

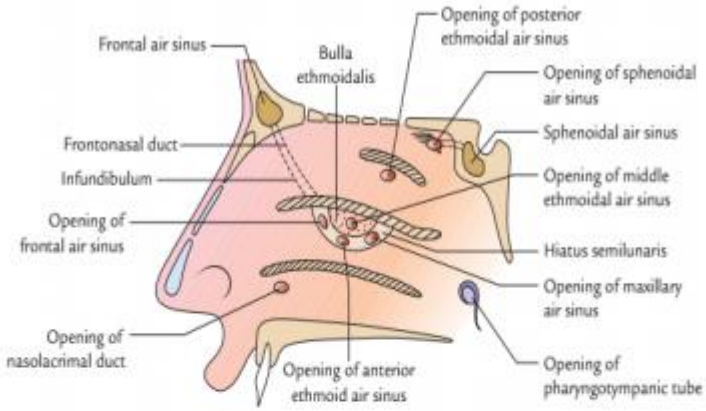


Fig. 17.7 Lateral wall of the nose with conchae removed showing openings of various sinuses and nasolacrimal duct.

Table 17.1 The openings in the lateral wall of the nose

Sites	Openings
Sphenoethmoidal recess	Opening of the sphenoidal air sinus
Superior meatus	Opening of the posterior ethmoidal air sinuses
Middle meatus	
• On bulla	Opening of the middle ethmoidal air sinuses
• In hiatus semilunaris	
– Anterior part	Opening of the frontal air sinus
– Middle part	Opening of the anterior ethmoidal air sinuses
– Posterior part	Opening of the maxillary air sinus
Inferior meatus	Opening of the nasolacrimal duct (in the anterior part of meatus)

Note :-

Meatus in the Middle Meatus (sinus) :- (Opening of sinuses)

1- Anterior :- Frontal.

2- Middle :- Ethmoidal.

3- Posterior :- Maxillary.

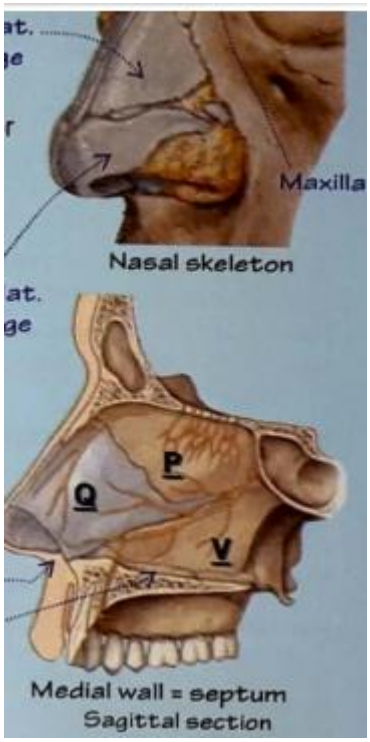
3- Medial wall of nasal cavity (The nasal septum) :-

The Nasal Septum :-

1- Septal Cartilage.

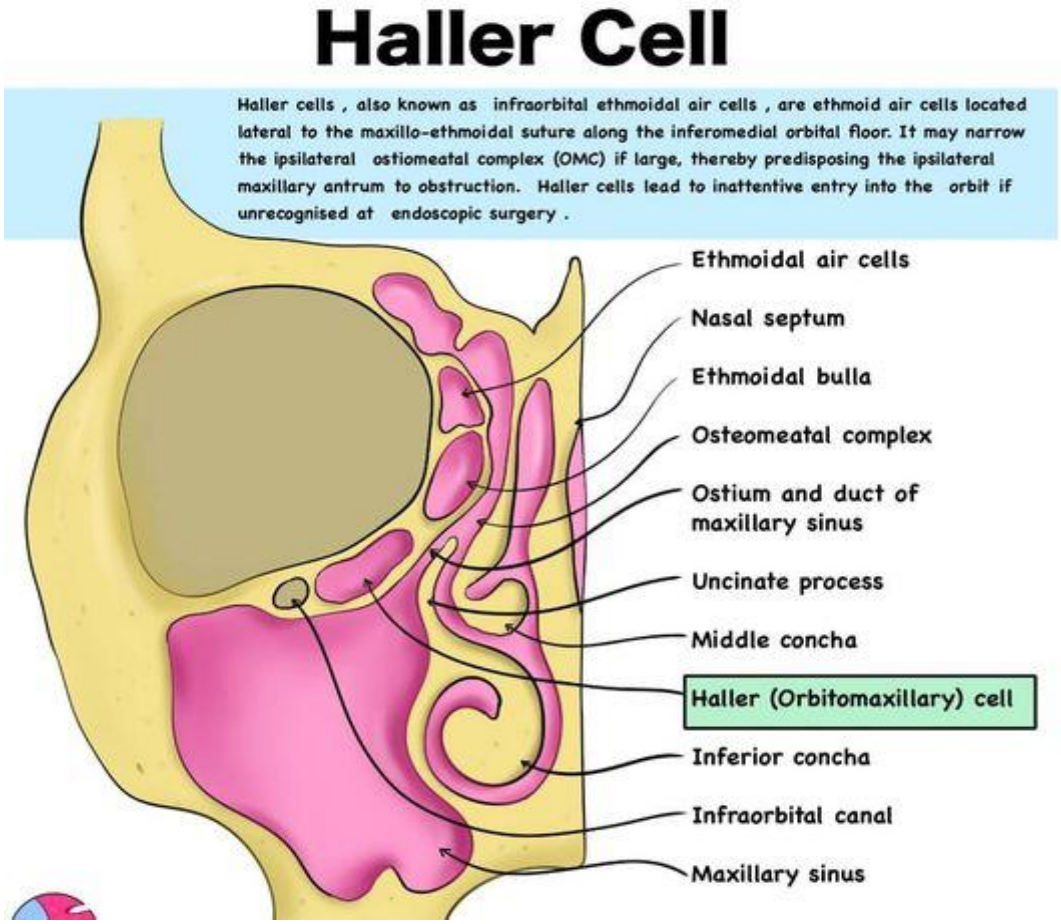
2- Perpendicular Plate of the ethmoid Bone.

3- The Vemor.



4- Haler cell :-

Is a pneumatized ethmoid cell that projects along the medial roof of the maxillary sinus .


Haller Cell
Haller cells , also known as infraorbital ethmoidal air cells , are ethmoid air cells located lateral to the maxillo-ethmoidal suture along the inferomedial orbital floor. It may narrow the ipsilateral ostiomeatal complex (OMC) if large, thereby predisposing the ipsilateral maxillary antrum to obstruction. Haller cells lead to inattentive entry into the orbit if unrecognised at endoscopic surgery .
Ethmoidal air cells
Nasal septum
Ethmoidal bulla
Osteomeatal complex
Ostium and duct of maxillary sinus
Uncinate process
Middle concha
Haller (Orbitomaxillary) cell
Inferior concha
Infraorbital canal
Maxillary sinus

5- Blood supply of little's area (also known as Kiesselbach's plexus) :-

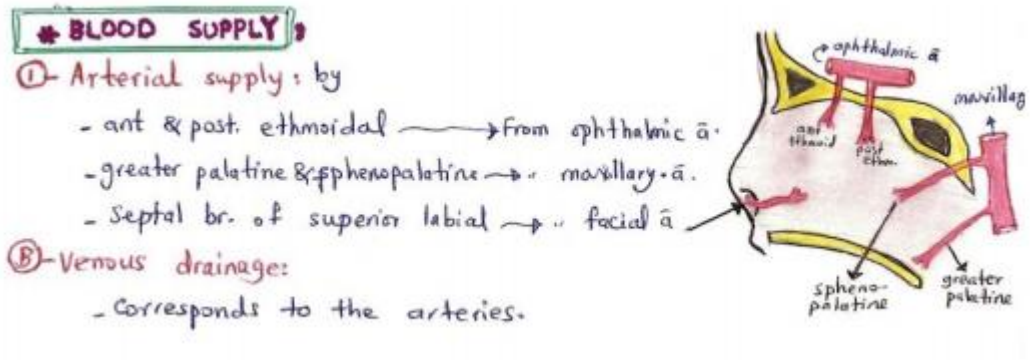
Definition :- Is found on the anterior nasal septum and is anastomosis between Internal and external Carotid artery (CA) at the anterior inferior Part of nasal septum.

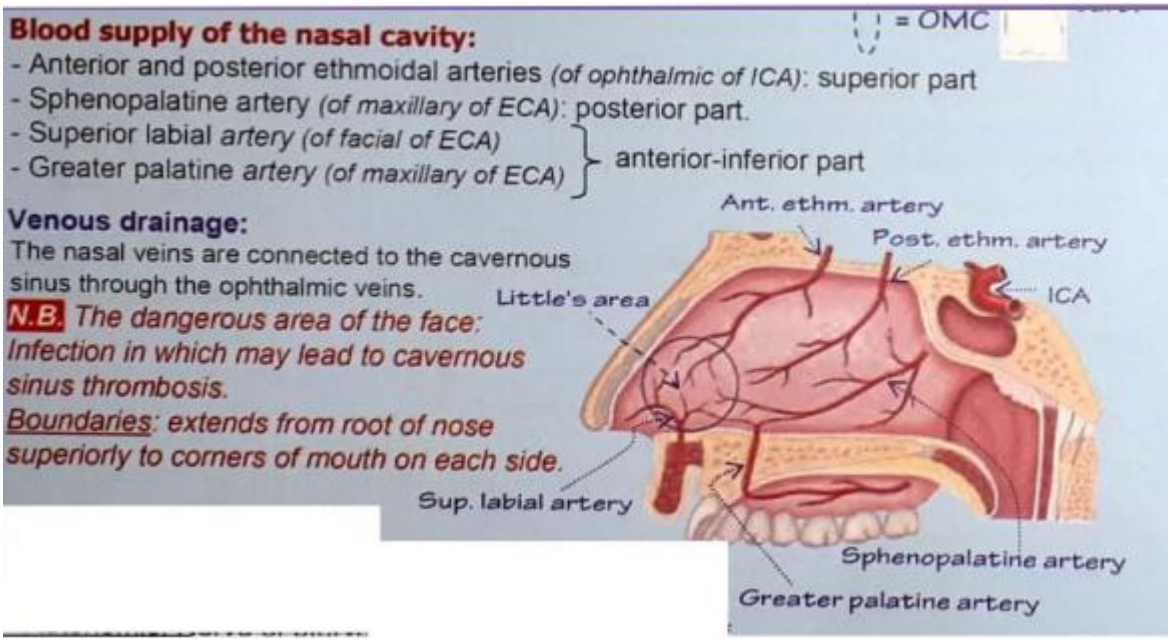
Blood Supply :- Is an anastomosis of 5 arteries :-

1- Anterior ethmoidal artery. 2- Posterior ethmoidal artery.

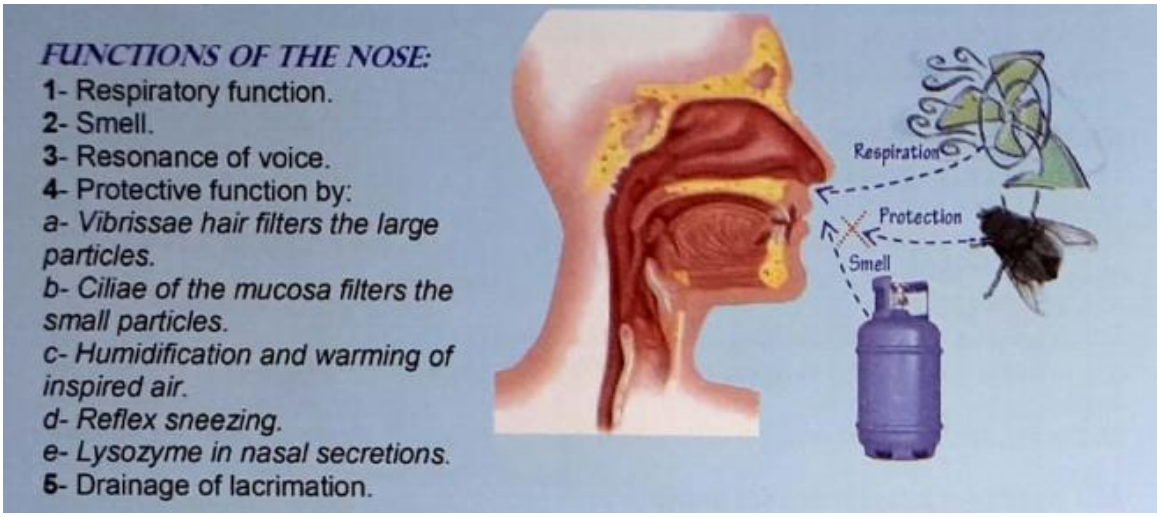
3- sphenopalatine artery. 4- Greater palatine artery.

5- Septal branch of the superior labial artery.


BLOOD SUPPLY
① Arterial supply : by
- ant & post. ethmoidal → from ophthalmic ā.
- greater palatine & sphenopalatine → " maxillary ā.
- Septal br. of superior labial → " facial ā
Ⓑ Venous drainage:
- Corresponds to the arteries.
ophthalmic ā
maxillary
sphenopalatine
greater palatine


Blood supply of the nasal cavity:
= OMC
- Anterior and posterior ethmoidal arteries (of ophthalmic of ICA): superior part
- Sphenopalatine artery (of maxillary of ECA): posterior part.
- Superior labial artery (of facial of ECA)
- Greater palatine artery (of maxillary of ECA)
} anterior-inferior part
Venous drainage:
The nasal veins are connected to the cavernous sinus through the ophthalmic veins.
N.B. The dangerous area of the face: Infection in which may lead to cavernous sinus thrombosis.
Boundaries: extends from root of nose superiorly to corners of mouth on each side.
Ant. ethm. artery
Post. ethm. artery
ICA
Little's area
Sup. labial artery
Sphenopalatine artery
Greater palatine artery

6- Functions of the nose :-



7- Symptoms of nasal diseases :-

1- Nasal obstruction.	2- Discharge.	3- Deformity.
4- Epistaxis.	5- Facial pain.	6- Headache.
7- Smell disorder (Anosmia).	8- Sneezing.	9- Snoring.
10- Swelling.	11- Orbital Symptoms.	

Sinusitis	**Rhino-sinusitis**
8- Definition and causes of sinusitis (Rhino-sinusitis) :- ●Definition :- Is infectious or non-infectious inflammation of one or more sinuses. - Infection lasting 4 weeks or Less. ●Causes :- 1- Allergic. 2-Viral 3- Bacterial or rarely Fungal.	**9- Definition and types of Rhino-sinusitis (Sinusitis) :-** ●Definition :- Inflammation of the mucosa of the sinuses (sinusitis), it is usually associated with rhinitis, So it is called Rhino-sinusitis (One or more of the sinuses may be affected). ●Types :- 1- Acute Rhinosinusitis. 2- Recurrent acute Rhinosinusitis. 3- Sub-acute Rhinosinusitis. 4- Chronic Rhinosinusitis.
10- Predisposing factors of sinusitis (Rhino-sinusitis) :- 1- 1- Cause of bacterial sinusitis is often multi-factorial 2- **Most common are viral** URTI and allergies 3- Irritants (tobacco smoke, air pollution). 4- Anatomic (deviated septum, polyps). 5- Trauma (dental procedures, scuba diving, Fractures). 6- Foreign Body. 7- GERD 8- Medical conditions (cystic fibrosis, immunodeficiency). 9- Medications (topical decongestant overuse, cocaine	**11-Predisposing factors for rhino-sinusitis :-** 1- Hereditary **2-** Hormonal. **3-** Climate **4-** - Psychosis and mental factors.
12 Clinical manifestation of Acute sinusitis :- Symptoms :- A- Majors :- 1- Facial pain and pressure. 2- Fever. 3- Nasal congestion and fullness. 4- Nasal obstruction and blockage. 5- Nasal discharge and purulence. 6- Hyposmia and anosmia. 7- Purulent rhinitis. B- Minors :- 1- Headache. 2- Halitosis. 3- Cough.. 4- Dental pain. 5- Fatigue 6- Ear pain and pressure.	**13- Clinical manifestation of Acute Rhinosinusitis :-** Symptoms :- 1- Itching and burning sensation. 2- Sneezing. 3- Nasal stuffiness. 4- Nasal obstruction. 5- Rhinorrhoea. 6- Ansomia or Hyposmia. 7- Headache.

Physical Findings (Signs) :-

1- Purulent nasal discharge.

2- Postnasal discharge.

3- Periorbital swelling.

4- Highest positive predictive value.

5- Erythema over symptomatic area.

6- Erythema and swelling of nasal mucosa.

7- Maxillary tooth tenderness.

8- Tenderness to palpation and percussion of paranasal sinuses.

Signs :-

1- Edematous nasal mucosa.
2- Swollen edematous turbinates.
3- Mucoid thin secretion (rhinorrhea).
4- Nasal polyp may present.

14- What is the antibiotic of choice in acute sinusitis :-

- Antibiotics → First-line :-
  1- Amoxicillin (500mg tid for 10 days).
  2- Beta-lactam allergy :-
     A- Doxycycline.
     B- Trimethoprim.
     C- Sulfamethoxazole.

16- What is the treatment of acute sinusitis :-

Management :-

1- 70% of cases will resolve spontaneously without Antibiotics.
2- **Analgesics** and **Anti**-pyretcs for pain and fever.
3- Topical or systemic decongestants may help- but short duration use only!.
4- Topical corticosteroids controversial but may help.
5- Saline irrigation and inhalation of steam may help.
6- Antibiotic therapy for those with ABS as defined by history and P/E.

Antibiotics - First-line :-

1- Amoxicillin 500mg tid for 10 days.
2- Beta-lactam allergy :- a- Doxycycline. b- Trimethoprim. c- Sulfamethoxazole.

Antibiotics - Second-line :-

1- Amoxicillin-clavulanate.
2- Cefuxorime axetil.
3- Beta-lactam allergy :-
   a- Azithromycin or b- Clarithromycin or c- Gatifloxacin or d- Levofloxacin or f- Moxifloxacin.

15- What is the treatment of acute rhinosinusitis :-

Conservative Treatment :-

1- Bed rest.
2- Avoidance of the cause (main treatment).

Medical Treatment :-

1- Vitamin C.

2- Antihistamine (as loratidine).

3- Topical Decongestant.

4- Steroids :-

a- Betamethazone nasal drops or spray.

b- Short acting systemic Steroids.

c- Mast cell stabilizer as sodium chromoglycate ??

Surgical Treatment :-

1- Septoplasty.

2- Nasal polyp-ectomy.

3- Parted turbunectomy or submucosal by laser or diathermy.

17- Complication of chronic rhino-sinusitis :-

Complications of sinusitis (rhinosinusitis)

Extension of infection beyond the muco-periosteal limit of the sinuses.

- CAUSES:

1- Acute sinusitis especially in children. due to thin lamina
2- Acute exacerbation on top of chronic sinusitis.

- *TYPES:* مقابل -->extracrainal in ear

A) Orbital complications: is the commonest

1- Orbital oedema.
2- Orbital cellulitis.
3- Extra-periosteal abscess.
4- Sub-periosteal abscess.
5- Cavernous sinus thrombosis.

N.B.: Posterior group of sinuses may lead to:

1- Optic neuritis.
2- Superior orbital fissure syndrome.
3- Orbital apex syndrome.

B) Cranial complications:

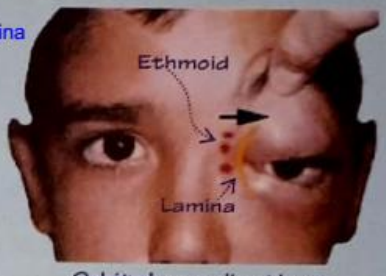
1- Osteomyelitis (frontal, rarely maxillary) مقابل mastotidits in ear
2-Fistula (after rupture of sub-periosteal abscess).

C) Intracranial complications:

1- Extradural abscess.
2- Subdural abscess.
3- Meningitis.
4- Brain abscess (frontal lobe).
5- Cavernous sinus thrombosis. here and in orbital complicaiton

D) Others:

1- Descending infections: Recurrent otitis media, pharyngitis, laryngitis and bronchitis.
2- Mucocele: if the sinus ostium is obstructed.



Orbital complications

Orbital cellulitis

Extra-periosteal abscess

Orbital abscess

Orbital Complications

The ethmoid sinus is the commonest source for orbital complications as it is separated from the orbit by thin plate of bone called lamina papyracea which is sometimes dehiscent.

- *CLINICAL PICTURE:* 5 stages

1- Orbital oedema: due to venous obstruction.
Oedema of upper eyelid. rarelly in lower due to draing by other vein

2- Orbital cellulitis: No pus formation. inf without pus
Oedema of upper eyelid.
Pain in the eye. dull ache pain no thrombin due
appear as redness (Chemosis. no pus
Proptosis.
شلل في عضلة العين Ophthalmoplegia.
Reversible diminution of vision.

3- Extra-periosteal abscess: Collection of pus outside the orbital periosteum.
As above but the pain become throbbing.

4- Orbital abscess: Collection of pus within the orbit due to rupture of orbital periosteum.
As above but the diminution of vision is irreversible.

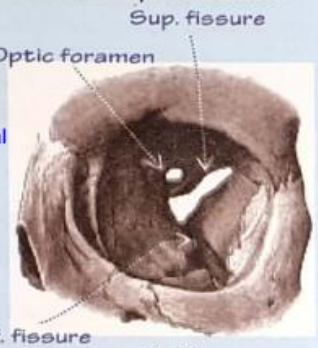
5- Cavernous sinus thrombosis: Extension of thrombosis through the ophthalmic veins.

• *INVESTIGATIONS:*
- CT for nose and paranasal sinuses
- Ophthalmologic consultation for assessment of vision and fundus examination دكتور عيون

• *TREATMENT:*
Medical:
-Hospitalization.
-Systemic antibiotics.
-Steroids: given if there is diminution of vision.
Surgical:
Decompression and drainage of pus by endoscopic sinus surgery (ESS)
- Indications: . Failed medical treatment for 48 hours.
. Abscess formation.
. Diminution of vision.

N.B. Complications of posterior group of sinuses may lead to:

1- Orbital apex syndrome: 2 (compresionion superior orbital and optic foramin)
Compression of structures passing through superior orbital fissure and optic foramen:
- Ophthalmic vein → oedema of upper eyelid.
- Ophthalmic nerve of 5th → pain over the forehead.
- 3rd ,4th ,6th cranial nerves → ophthalmoplegia + proptosis.
- Optic nerve → diminution of vision.



2- Superior orbital fissure syndrome: compresion super orbital
Compression of structures passing through the superior orbital fissure only (ophthalmic vein and nerve, 3rd ,4th, 6th cranial nerves).

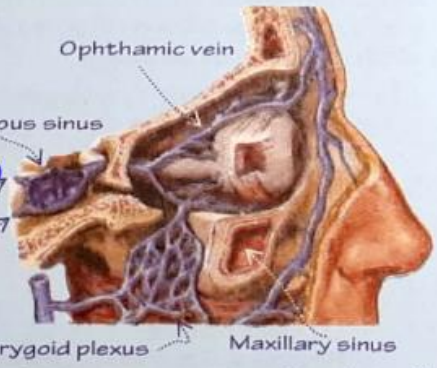
3- Optic neuritis. compreiosn of optic foramine

Osteomyelitis of frontal bone

Symptoms:
- Pain and swelling of forehead.
- Discharging fistula after rupture of subperiosteal abscess.

Signs:
Tender fluctuant swelling of forehead *(frontal subperiosteal abscess = Pott's puffy tumour).*
Investigations: CT is diagnostic.
Treatment:
Medical: Hospitalization and systemic antibiotics.
Surgical: Drainage of abscess and treatment of sinusitis.

pott's :- 3 1) in TB in spinal cord 2) in hand facture
3) pott's puffy tumor (subertial abcess inside bone and out)



Cavernous sinus thrombosis

• ***Causes:***
Spread of infection from SOS
1- **S**kin sepsis in the dangerous triangle.
2- **S**inusitis.
3- **O**rbital infection.
4- **S**uppurations of the pharynx: through emissary vein to cavernous sinus through pteroid pelxues
5- Lateral **S**inus thrombophlebitis complicating CSOM: through petrosal sinuses.

• ***Clinical picture:***
General: Fever, headache and malaise.

anatomy of caveronous sinius --> anterior 2(opthalmic vein ,spheonopaltine vein) post(super,inferal petral --> draing to alteral sinus)

Local: Oedema of upper eyelid.
Chemosis.
Proptosis.
Ophthalmoplegia.
Diminution of vision → blindness.

Cavernous sinus thrombosis

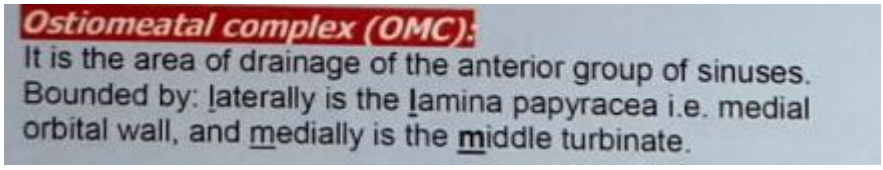
• ***Investigations:***
- CT with contrast.
- MRV (magnetic resonance venography).

• ***Treatment:***
Medical:
- Hospitalization.
- Systemic antibiotics (intravenous) that cross the blood brain barrier.
- Anticoagulants as heparin.
Surgical:
Treatment of infected sinuses after recovery.

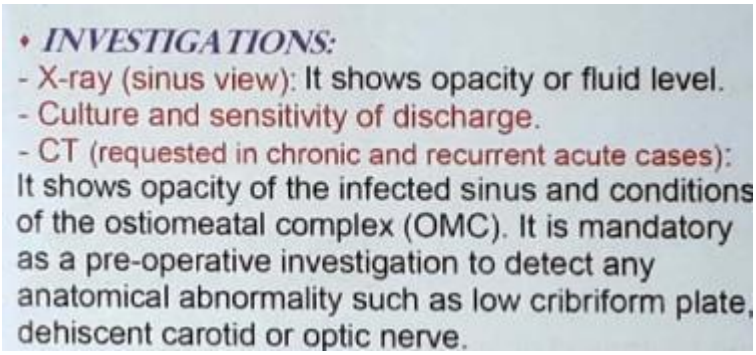
18- Complications of sinusitis :-

A- Local complications	B- Orbital complications	C- Intracranial complications
1- Mucocele. 2- Osteomyelitis (Pott's puffy tumor).	1- Periorbital cellulitis. 2- Orbital cellulitis. 3- Orbital abscess. 4- Subperiosteal abscess. 5- Cavernous sinus thrombosis.	1- Meningitis. 2- Subperiosteal abscess.

19- Ostio meatal complex :-


Ostiomeatal complex (OMC):
It is the area of drainage of the anterior group of sinuses.
Bounded by: laterally is the lamina papyracea i.e. medial orbital wall, and medially is the middle turbinate.

20- Describe the following picture of head x ray and DD (Sinusitis) :-


• INVESTIGATIONS:
- X-ray (sinus view): It shows opacity or fluid level.
- Culture and sensitivity of discharge.
- CT (requested in chronic and recurrent acute cases):
It shows opacity of the infected sinus and conditions of the ostiomeatal complex (OMC). It is mandatory as a pre-operative investigation to detect any anatomical abnormality such as low cribriform plate, dehiscent carotid or optic nerve.

21- Definition of rhinitis :- It's inflammation of the lining of the nose, characterized by one or more of the following symptoms :-

1- Nasal obstruction.

2- Rhinorrhoea.

3- Sneezing.

4- Itching.

5-headache

22- Definition of allergic rhinitis and its Symptoms :-

Definition :- Hypersensitivity of mucosa of the nose and sinuses mediated by IgE to antigen material.

Symptoms :- Recurrent attacks of :-

1- Sneezing. 3- Rhinorrhea (bilateral and watery).

2- Itching. 4- Nasal obstruction (bilateral).

23- Atrophic rhinitis and smell disorders :-

Atrophic rhinitis :- Is a chronic inflammatory disease characterized by progressive atrophy of the nasal mucosa and the underlying bone of the turbinates.

Smell disorders :- 1- Anosmia :- (absence of smell). 3- Parosmia.

2- Hyposmia (decrease of smell). 4- Cacosmia.

24- Chronic specific inflammation of rhinitis :-

1- Rhinoscleroma (commonest).

2- Syphilis.

3- Lupus.

4- Leprosy.

5- Fungal infection.

25- Definition and causes of vasomotor rhinitis :-

Definition :- It is Non-allergic perennial rhinitis due to disturbance of Autonomic nerve supply of the nose (Para-sympathetic part).

Causes :- Is due to parasympathetic over activity which lead to congestion and vasodilatation.

Predisposing factors :- 1- Genetic. 2- Physical. 3- Emotional.

26- Definition, cause, symptoms, complications and treatment of Common cold (Coryza) **:-**

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COMMON COLD (CORYZA)

- CAUSATIVE ORGANISM: Rhinoviruses (More than 100 types).
- MODE OF TRANSMISSION: Droplet infection.
- PREDISPOSING FACTORS:
  - Over-crowdness.
  - Low immunity.
  - Exposure to temperature changes.
- INCUBATION PERIOD: 1 - 3 days.
- ***CLINICAL PICTURE:***

Symptoms

1- Prodromal stage: vasoconstartion

General: - Bony aches.

Local: - Dryness.
- Burning sensation in the nose.
- Sneezing.

Burning & sneezing = prodromal stage of common cold

2- Catarrhal stage: vasodilation

General: Fever, headache and malaise.

Local: - Bilateral nasal obstruction.
- Bilateral watery nasal discharge.

3- Stage of 2ry bacterial infection:
- Discoloured mucopurulent nasal discharge
- Persistent nasal obstruction.

4- Stage of Recovery:
In about 3 days (without 2ry infection).

Signs

Congested nasal mucosa with watery or mucopurulent discharge (according to the stage).

Fever, headache, malaise, obstruction & discharge = catarrhal stage of common c.

- ***COMPLICATIONS:***
  - Infection of the surrounding structures: As sinusitis, otitis media, pharyngitis, laryngitis and bronchitis.
  - Anosmia, which is sometimes permanent (viral peripheral neuritis).
- ***TREATMENT:***

A) Prophylaxis:
- Avoid predisposing factors.
- Vaccination is of no value.

B) Curative:
- Complete bed rest and plenty of warm fluids.
- Antibiotics to prevent 2ry infection.
- Analgesic& antipyretic.
- Antihistaminic.
- Vitamin C.

Bed rest, fluids, vitamin C, antihistamine, antipyretic ± antibiotics

INFLUENZA

Similar to common cold except:
- CAUSATIVE ORGANISM:

Influenza virus type A, B and C, or other epidemic viruses.
- CLINICAL PICTURE: as common cold but more severe.
- COMPLICATIONS: as common cold but more common.
- VACCINATION: can be done.

N.B. Rhinitis of Exanthemata: *similar to influenza but with skin rash, e.g. Measles.*

Definition :- ……..

Predisposing factors :-

1- Low resistance of the patient particularly in children.

2- Exposure to cold, chills and temperature change.

3- Over-crowdness.

Clinical picture :-

1- Stage of ischemia (vasoconstriction).

2- 2- Stage of hyperaemia.

3- Stage of secondary Bacterial infection.

4- Stage of resolution.

Complications

1- Sinusitis.

2- Phoryngitis.

3- Otitis media . 4- Laryngitis.

4-Laryngeo-tracheo-bronchitis.

5- Pneumonia

7- Permanent Anosmia

Treatment :-

A- Prophylactic :-

1- Avoid contact with patient.

2- Vaccination.

3- Surgical correction of nasal septum.

B- General :-

1- Bed rest and blenty of fluids.
2- Analgesic and antipyretics.
3- Systemic antibiotics.
4- Vitamin C.
5- Anti histaminics.

C- Local :-

1- Decongestant nasal drops.
2- Steam inhalation.

27- Types, Clinical features, Complication and management of Foreign body in the nose :-

Types :-

1- Animate (vegetable).
2- Inanimate (non-vegetable).

Clinical features :-

1- Sneezing and pain.
2- Unilateral nasal obstruction.
3- Unilateral offensive Mucopurulent Discharge.
4- Anterior rhinoscopy.
5- Hard F.B may be felt by probing.
6- Sometimes fiber-optic endoscopy.

Complications :-

1- Infection.
2- Pulmonary complications.
3- Rhinolith.

Treatment :- The F.B removed carefully by :-

1- Hook. Or
2- Forceps.
3- Suction.

28- Definition, causes, Clinical picture, complications and Treatment of the Septal abscess :-

Definition :- Collection of **pus** between muco-perichondrium and cartilage of the septum.

Causes :-
1- Infected hematoma.
2- Infected Surgical wound.
3- Furuncle.

Clinical picture :-
Symptoms :-

A- General symptoms :-	B- Local symptoms :-
1- Fever	1- Pain.
2- Headache.	2- Bilateral nasal obstruction
3- Malaise.	

Signs :-
1- Anterior rhinoscopy :- Bilateral fluctuant tender swelling on both sides of the septum.
2- Syringe aspiration :- pus.

Complications :-

①Cavernous sinus thrombosis.

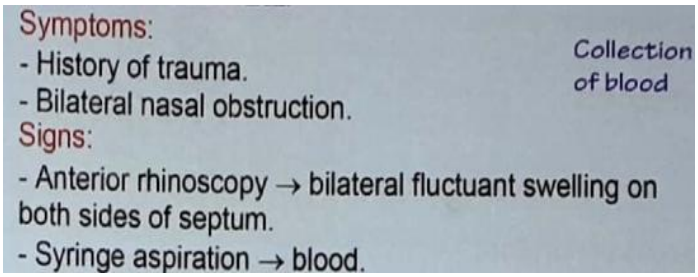
②Necrosis of septal cartilage.

Treatment :-
1- Systemic Antibiotics.
2- Incision and evacuation.
3- Anterior nasal pack to prevent recollection.

29- Definition, causes Complication and treatment of septal hematoma :-

Definition :- Collection of **blood** between peri-chondrium and cartilage of septum.

Causes :-
1- Traumatic (usually).
2- Fracture nose.
3- Surgical.


Symptoms:
- History of trauma.
- Bilateral nasal obstruction.
Signs:
- Anterior rhinoscopy → bilateral fluctuant swelling on both sides of septum.
- Syringe aspiration → blood.
Collection of blood

Complications :-
Nasal (septal) abscess.

Treatment :-

①Systemic Antibiotics to prevent secondary infection.

②Incision and

.

30- Causes, clinical picture and Treatment of Septal perforation :-

Causes :- 1- Traumatic (Most common cause).

2- Inflammatory :- A- Acute :- (septal abscess).

B- Chronic (Lupus→ cartilaginous).

3- Neoplastic :- Malignant tumor.

4- Toxic.

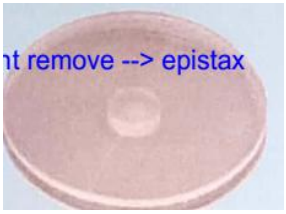
Clinical picture :- (It may be asymptomatic if small).

1- Epistaxis and crusty Discharge.

2- Whistling sound during respiration.

3- Saddle nose.

Treatment :-



A- Medical :-

1- Repeated alkaline nasal douche to dissolve the crusts.

2- Closure of the perforation by obturator (button like).

B- Surgical :- Closure of the perforation by graft or mucosal flap from the surrounding area

31- What is the nasal cycle and Describe the nasal cycle :-

Definition :- Is the periodic alternation in nasal airflow resistance between the two nasal cavities.

- Regulated by the Autonomic nervous system.

- This cycle varies from person to person but Normally takes Three to Four hours.

32- Type and treatment of septal deviation :-

Types :- 1- Simple deviation (C-shaped and S-shaped).
2- Deviation with Spur.
3- Deviation with dislocation.

Treatment :-

1- Sub-mucosa resection after age 18.

2- Septoplasty at any age.

33- Complication of nasal septum deviation :-

1- Recurrent sinusitis. 2- Recurrent otitis media.

3- Recurrent pharyngitis. 4- Secondary atrophic or hyper-trophic rhinitis.

34- Definition and causes of the Nasal Polyps :-

Definition :- Pedunculated oedematous mucosa prolapsed through Middle Meatus to the nasal cavity.

[Either from :-

- Ethmoid → ethmoidal **= Allergic Polyps.**
- Maxillary antrum = **Antro-choanal polyp].**

Causes :-

1- Allergic Rhinitis :- associated with other allergic manifestation.

2- Inflammatory :- Ethmoidal sinusitis.

3- Allergic Fungal sinusitis.

35- Types of the Nasal polyp and their treatment :-

	1- Allergic (ethmoidal) Polyps	**2- Antro-choanal polyp**
Definition	Pedunculated oedematous mucosa of the **Ethmoid** prolapsed through the Middle Meatus to the nasal cavity.	Pedunculated oedematous mucosa of **Maxillary** antrum prolapsed through Middle Meatus to the nasal cavity then posteriorly to the naso-pharynx passing from the choana.
Note	It is bilateral and Multiple (with Allergic criteria).	Unilateral and Single (without Allergic criteria).
Treatment	A- Medical :- 1- Anti-allergic treatment (Steroids and anti-histaminic). 2- Antibiotics for infection. B- Surgical :- 1- Nasal polyp-ectomy. 2- Ethmoid-ectomy.	1- Endoscopic sinus surgery (ESS) and removal of Polyp is the standard treatment. 2- Radical antrum operation (used in recurrent cases).

36- Definition and types of the Granuloma of nose :-

Definition :- Is Chronic specific inflammation with formation of macrophages.

Types :-

1- Rhino-**s**cleroma (The commonest).
2- **S**yphilis.
3- **L**upus
4- **L**eprosy
5- Fungal infection.

.

37- Causes of unilateral nasal obstruction :-

1- Congenital (choanal atresia).

2- Traumatic (Fracture or Foreign body in nose).

3- Inflammatory (Diphtheria and Acute rhinitis/ sinusitis).

4- Neoplastic (Small angio-fibroma or carcinoma).
5- Deviated septum

6- Miscellaneous :-

1- Deviated nasal septum (DNS). 2- Hypertrophic inferior turbinate.

3- Antro-choanal polyp. 4- Foreign body. 5- Rhinolith.

Nasal Obstruction

- Smell Disorde
- Proptosis

	Bilateral obstruction	*Unilateral obstruction*
Congenital	Bilateral Choanal atresia	Unilateral Choanal atresia
Traumatic	Fracture nose Septal haematoma.	Fracture nose. FB in nose.
Inflammatory	Acute non specific rhinitis Chronic rhinitis (specific and non-specific). Acute rhinosinusitis. Chronic rhinosinusitis. Septal abscess.	Diphtheria Unilateral rhinosinusitis. Allergic fungal sinusitis
Neoplastic	Malignant tumours of nose and sinuses (if extensive).	Benign and malignant tumours limited to one side.
Miscellaneous	Allergic rhinitis. Vasomotor rhinitis. Allergic polypi. Deviated septum (S-shaped).	Antro-choanal polyp. Deviated septum (C-shaped).
Nasopharyngeal causes	Adenoid. Tumour: as Benign: Angiofibroma. Malignant: Carcinoma	Small angiofibroma or carcinoma

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Nasal Discharge It may be anterior or posterior nasal discharge.

	Bilateral discharge	*Unilateral discharge*
Watery	Acute non-specific rhinitis: (common cold) in catarrhal stage. Allergic rhinitis. Vasomotor rhinitis. Excessive lacrimation.	CSF rhinorrhoea
Water and food	Perforated palate (syphilis) Cleft palate. Paralysis of soft palate.	Oro-antral fistula.
Bloody	All causes of epistaxis (most probably general).	All causes of epistaxis (most probably local).
Mucopurulent and Purulent	Causes of bilateral nasal obstruction *(stasis → Infection)*	Causes of unilateral nasal obstruction *(stasis → infection)*
Crusty	Atrophic rhinitis. All granulomas. Septal perforation.	Atrophic rhinitis (if unilateral as after turbinectomy).

38- Nasopharyngeal carcinoma and its Treatment :-

●It's Mis-diagnose due to→"Rosen-muller fossa" is silent area and can't be seen by endoscopy.
●Most common site :- Rosen-muller fossa.
- It's Sub-mucosal. - It's ulcerative (not fungating).
Presentation :-

A- First common Presentation :- Swelling in the neck (Not painful and Not multiple).

B- Second common Presentation :- 1- Ear ache. 2- Deafness.
3- Facial pain. 4- Secondary otitis media.

C- Third common presentation :- Paralysis of soft palate of same side.

Treatment :- Radio-therapy is the only treatment.

Nasopharyngeal carcinoma

- **Age:** Old above 60 years.
- **Sex:** More in males.
- **Race:** More in Chinese.
- **Predisposing factors:**
  - Genetic: related to human leucocytic antigen (HLA).
  - Epstein-Barr virus infection.
  - Smoking.
  - Irradiation.
- **Pathology:**

- Gross picture: *Shape:* ulcer, cauliflower mass or nodular infeltrative.
  Site: fossa of Rosen Muller is the commonest site.
- Microscopic picture: squamous cell carcinoma is the commonest.
- Spread: 1) Direct spread: to the surrounding structures.
  2) Lymphatic spread: retropharyngeal then to upper deep cervical LNs.

N.B. Nosopharynx is a midline structure, so bilateral nodal metastasis is common.

3) Blood spread: LLBB (Lung, Liver, Bone, and Brain).

- Prognosis: bad as the nasopharynx is a silent area, and midline.

- **Clinical Picture:**

❖ ***Symptoms: (ANNN)***

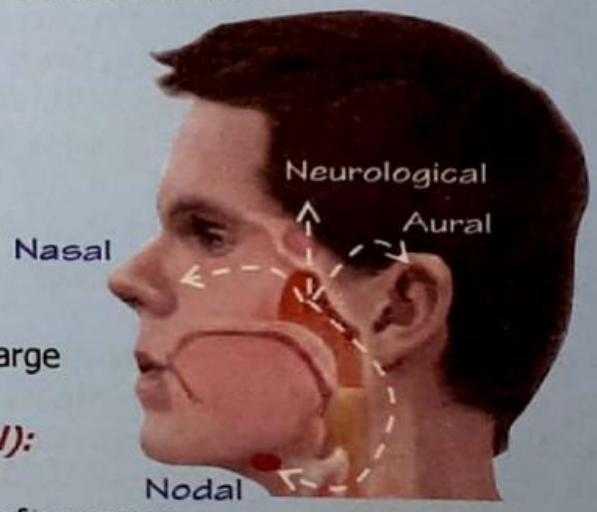
a. Symptoms of primary tumour :

. Aural (= ear) symptoms:

- Unilateral secretory otitis media (CHL): due to obstruction of Eustachian tube
- Reffered otalgia through 9th nerve.

. Nasal symptoms:

Unilateral then bilateral nasal obstruction, discharge and epistaxis.



b. Symptoms of local spread (Neurological):

Cranial nerve palsies in this order of frequency:
- 5th: unilateral facial pain, numbness then loss of sensation.
- Ocular (3rd , 4th , 6th): squint, diplopia and ophthalmoplegia.
- Lower 4 cranial nerves: compression by retropharyngeal LNs at skull base (jugular foramen)

c. Symptoms of lymphatic spread (Nodal):
Upper deep cervical LNs may be felt, incidence of lymphatic spread is 70%.
d. Symptoms of blood spread:
Lung, liver, bone, and brain (LLBB).

❖ ***Signs:***

a. Local examination: Nasopharyngeal examination: with nasal endoscopy
Neck examination: for lymph nodes

b. General examination: to exclude distant metastasis.

سؤال مهم

Trotter's traid = (diagnostic for nasopharyngeal carcinoma):
1) Unilateral facial pain (trigeminal nerve).
2) Unilateral palatal immobility (fixation = invasion of palate).
3) Unilateral conductive deafness (ET obstruction).

• **Investigations:**
- CT: to detect site, size and extensions of the tumour, and retropharyngeal LNs metastasis *(it is not clinically palpable).*
- MRI: to detect intracranial extension.
- Biopsy by nasal endoscopy (under local anaesthesia).
- Metastatic work up.

• **Treatment:**
- ***Radiotherapy:*** to 1ry tumour in the nasopharynx and to neck (for LNs) in both sides.
- ***Surgery:*** has no place as a primary treatment, it is done only (radical neck dissection) for persistent or recurrent LNs *(after failure of radiotherapy to control the metastatic nodes).*

39- Silent area of nose :-	**40-What are the silent area in the head and neck :-**
Definition :- Is area that may lead to L.Ns metastasis before giving Symptoms related to affected area.	
Site :- 1- Fossa of rosen-muller (Naso pharynx). 2- Pyriform fossa (Hypo-pharynx). 3- Floor of mouth. 4- Supra-glottic area of larynx. 5- Tonsil. 6- Tongue base. 7- Thyroid.	1- Nasopharynx (Rosenmuller fossa). 2- Pyriform fossa. 3- Floor of mouth. 4- Base of tongue and valecula. 5- Tonsillar crypts. 6- Thyroid gland 7- Supraglottic larynx (ventricles and epiglottis). 8- Maxillary sinus(very rare).

41- Most common cause and the most common site of epistaxis :- Most common causes :-

A- Local causes IITT	B- General causes
1- Idiopathic (commonest) :- From little's area. 2- Traumatic :- (Foreign body or Fracture of nose or Surgical). 3- Inflammatory :- (Acute specific, non specific rhinitis or Acute and chronic sinusitis). 4- Neoplastic :- A- Nasal Tumor :- 1- Hemangioma (benign). 2- Carcinoma (malignant). B- Nasophrayngeal Tumor :- 1- Angiofibroma (benign). 2- Carcinoma (malignant	1- C.V.S causes :- a- Hypertension (HTN). b- Supra-medastinal mass. 2- Hematological causes :- a- Thrombocytopenic purpura. b- Haemophilia. C- Leukemia. d- Hodgkin's lymphoma 3- Hepatic causes :- a- Liver cirrhosis. b- Liver Failure. 4- Other causes :- a- Fever → Rheumatic fever (RF). B-Lupus erythematosus cell (LEC) → Vasculitis. 5- Drugs :- a- Aspirin. b- Heparin.

Most common site :-

A- From Little area (source is commonest site) :-

1- Anterior Ethmoidal artery [Ophthalmic artery].

2- Sphenopalatine artery [Maxillary artery].

3- Greater Palatine artery [Maxillary artery].

4- Superior labial artery [Facial artery]. B- Bleeding from above the middle turbinate

42- Management of epistaxis :-

A- Initial Management	B- Non-surgical Treatment	C- Surgical Treatment
1- ABC's. 2- Medical history/ Medications. 3- Vital signs- need IV? 4- Physical exam :- a- Anterior rhinoscopy b- Endoscopic rhinoscopy. 5- Laboratory exam. 6- Radiologic studies.	1- Control of hypertension. 2- Correction of coagulo-pathies/ thrombocytopenia :- - FFP or whole blood/reversal of anticoagulant/platelets. 3- Pressure/Expulsion of clots. 4- Topical decongestants/vasocontrictors. 5- Cautery (AgNo3 vs. TCA vs. Bipolar vs.Bovie). 6- Nasal packing (effective 80-90% of time). 7- Greater palatine foramen block. 8- Humidity/emolients. 9- Discontinue offending meds. 10- Nasal saline sprays. 11- Avoidance of nose picking/blowing. 12- Sneeze with mouth open. 13- Avoid straining/bed rest.	1- Transmaxillary IMA ligation. 2- Intraoral IMA ligation. 3- Anterior/Posterior Ethmoidal ligation. 4- Trans-nasal endoscopic Spheno-palatine ligation. 5- External carotid artery ligation. 6- Septodermoplasty /Laser ablation.

هذا الكلام الذي يشتيه العطاب

* Managment of Epistaxis :- ABC

1) ABC's, Blood pressure & IV-Line.
2) History
3) Examination of the nose

* imp: When you asked how to manage epistaxis answer as you are an ent doctor and have a well prepared clinc.

* as soon as the pt. came ē epistaxis ask him to press and close his nose with his thumb & index finger for 5 minutes. why!? because avarage clotting time is less than 5 minutes.
→ then if the pt's nose stopped to bleed, ask him to ① brith normally ⟶ organization of the clot → bleeding stops.
② Use of tetracyclin
③ لا يسجد ش ④ لا يتمخط بقوه
_ if bleeding continue. preceed to 4)

4) Use Bi-polar electric Coagulator ((ttt of choice))
→ 90% of bleeding is stopped after Cauterization of the bleeding artery.

- If bleeding is continue → (5)

5) Nasal Packing: anterior

- Use gloves and fill the glove with gauze and make it uniform in shape, then use lubricant as Vaseline & antibiotic ointment and start packing.

- N.B: Do not use gauze directly in the nose because it cause destruction of the cilia → the Pt. complain from crusting for 3-4 weeks

- If bleeding didn't stop → (6)

6) Post. nasal Packing:-

- introduce a foly's catheter from the nose → till posterion naso pharynx → inflate the ballon with air → then pull to stop bleeding. and fix the cathter → then do ant. packing as mentioned above.

- keep the cathter for 2-3 days.

- N.B: Don't use the old traditional methode which is mentioned in mosaad's book.

- If after 2-3 days ((after removing of the pack)) → (7)

7) Ligation of arteries.

• Maxillary a. Ligation if the bleeding from Post. Part of the nose.

→ is the most damaging → necrosis of some structures of the face.

• Ethmoidal a. Ligation if the bleeding from Superior Part of the nose.

→ is done via orbita Periosteum approach.

* Phases of Cautraization:-

① Stage of evaporation of water → denaturation of proteins.

② Stage of Carbonization due to evaporation of nitrogen.

So ⟹ When we do Cautarization of ant. ethmoidal artery, we do evaporization of artery Just if Carbonization Stage is reached → break down of the artery → to the retro balbar Space → Swealing of eye → Streaching of optic nerves → loss of vision.

* The Post. ethmoidal a. is so small and rarely bleed, so no need for ligation or Cautvization.

- if Cautrization occur → injury to optic nerve may occur directly or indirectly by the effect of heat.

* Non-Surgical ~~ttt~~ → See Power Point

* Types & Shapes of nasal Packs → See Power Point

* ECA Ligation

إذا كان المريض في قرية مثلاً ولا يوجد غير جراح فيستخدم هذه الطريقة مؤقتا إلى أن يتم نقل المريض إلى طبيب ENT.

- Disadvantage → damage of so many structre in the face.

* Laser: Light amplification by stimulated emision of radiation.

- or is a concentrated heat in a specific area, mostly is used for cutting of neoplasm for example.

43- Complications of nasal Trauma :-

1- ..... 2- ..... 3- .....

44- Complication of nasal bone fracture :-

1- ..... 2- ..... 3- .....

45- Treatment of nasal bone fracture :-→open surgery or closed →then

A- If the patient is seen shortly after Trauma :

1- If there is No marked edema :-	2- If there is marked edema :-
- Manual reduction. - If the patient is Not cooperative or for the fear of Shock put the patient under anesthesia (general or local) the reduction done by :- 1- Walsham's forceps :- For nasal bone fracture. 2- Asch forceps :- For the septum	- Give Antibiotics and analgesic. - Don't forget to stop the bleeding then wait for edema to subside tell. - The patient to come back in Less than 2 weeks ==> reduction.

B- If the patient is seen Late (after more than 2 weeks) :-

1- Adult :- Ask the patient to come back after 3 months and perform surgery.

2- Child :- Wait until they are 17 years old then perform the surgery.

46- Indication and complications of septoplasty :-	**47- Indication and complication of sub-mucosal resection (S.M.R) :-**
Indication :- 1- Sympto-matizing Deviated septum at any age. 2- Septal dislocation.	Indications :- 1- Nasal obstruction. 2- Recurrent upper respiratory infection. 3- Recurrent sinusitis. 4- Recurrent epistaxis. CONTRINDCUITON :- ●SEPTAL DISOLACTION
Complications :-ABCD 1- **A**nalesthetic complications. 2- **P**ost-operative hemorrhage, hematoma and infection (septal abscess and sinusitis). 3- Adhesion between septum and turbinate (it is commonest complication). 4- **P**erforation of the septum (Less common complication). 5- **C**SF rhin-orrhoea (Trauma to cribiriform plate).	Complications :- 1- Hemorrhage. 2- Septal perforation. 3- Flapping septum. 4- Adhesion between septum and Lateral wall.

Operations

Deviated nasal septum is corrected by either:

a. Submucous resection of the septum (SMR)

Removal (resection) of the deviated portion of the septal cartilage ± bone.

INDICATIONS:

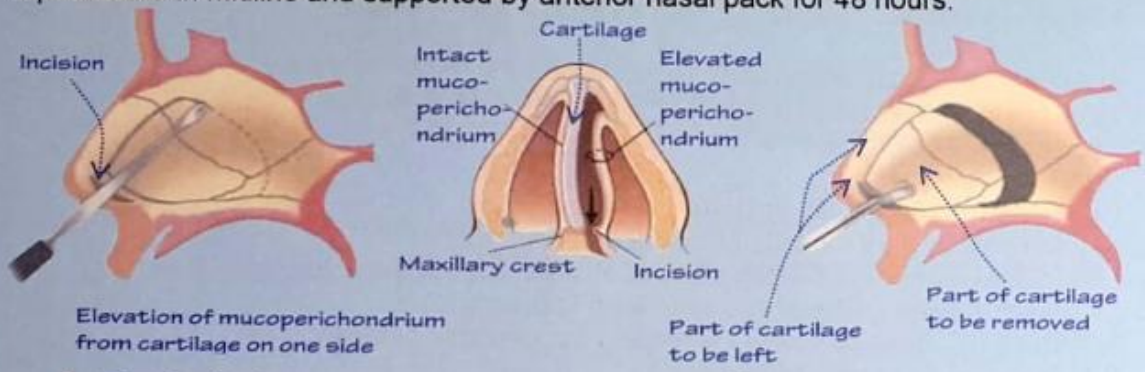
Symptomatizing deviated septum.

CONTRAINDICATIONS:

- Before the age of 18 years (as removal of cartilage will interfere with the growth of face).
- Presence of septal dislocation (as the anterior end of septal cartilage is not removed).

TECHNIQUE:

- Anaesthesia: General or local.
- Incision: vertical in the mucoperichondrium in one side, behind anterior end of the septum.
- Elevatation of mucoperichondrial flap of this side, an incision is deepened in the cartilage more posterior to the previous incision, the mucoperichordrial flap is elevated on the other side.
- The deviated cartilage (± bone) is removed, and then mucoperichondrial flaps are repositioned in midline and supported by anterior nasal pack for 48 hours.



Elevation of mucoperichondrium from cartilage on one side

b. Septoplasty

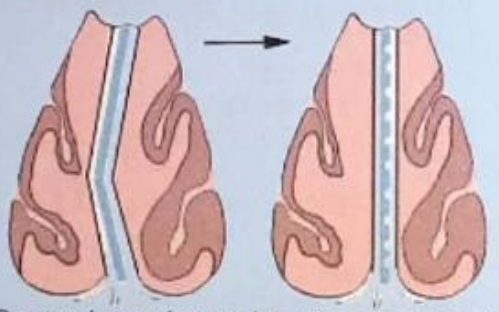
Straightening of the spetal cartilage without (or with minimal) removal.

INDICATIONS:

- Symptomatizing deviated septum at any age.
- Septal dislocation.

TECHNIQUE:

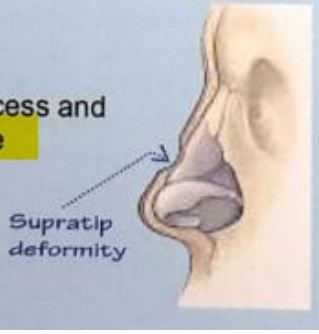
- Anaesthesia: General or local.
- Incision: at the anterior end of the septum (which may be dislocated) with elevation of mucoperichondial flaps and straightening of deviated portion.



Septoplasty (straightening of septum)

COMPLICATIONS OF SMR AND SEPTOPLASTY: **(APCD)**

1. Anesthetic complications. anaphylatic ,arrest cardic ,apena
2. Post-operative haemorrhage, haematoma, infection (septal abscess and sinusitis), and adhesions between septum and turbinate (it is the commonest complication).
3. Perforation of the septum (more in SMR, less in Septoplasty).
4. CSF Rhinorrhoea (trauma to cribriform plate).
5. Deformity: Supratip depression (in SMR and not in septoplasty).



48- Spheno-ethmoidal recess :-

49- Mucolytic nasal drops ==> rhinitis medicamentosa :-

50- Complication of nasal obstruction :- مذكور سابقاً

51- Acute rhinosinusitis symptoms and signs :-

52- How to diagnosis, treatment and complication of Rhino-scleroma :-

Investigation	**Treatment**	**Complications**
1- Biopsy :-	Medical :- 1- Rifampicin	1- Extension :-
	2- Streptomycin	- Subacute (ulceration).
2- Culture.	3- Alkaline meal douch.	- Pharynx (Pharyngo-scleroma)
		- Larynx (Laryngo-scleroma)
3- Electro-microscope exam		2- Fibrosis.
	Surgical :- 1- Removal of the mass.	3- Malignant transformation if
	2- Laser	treated by radiotherapy.

53-classifcation of rhinitis ?

* classification :-

1) - allergic :-
   - A - Seasonal
   - B - Perrnial

2) - infectious
   - A - acute
   - B - chronic
   - C - specific , acute or chronic
   - D - Non spcific " "

3) - other Causes :-
   - A - idiopathic
   - B - NARES → Nos Allergy Rhinitis eosinphilline Syndrone
   - C - occupational
   - D - Hormonal
   - E - Drug induced
   - F - Irritted
   - G - food
   - H - atrophic

54) nasal obstruction ?

* Nasal obstruction :-

- AE

I- physiological "Normal" :-

A → Cyclic — تبادل إحتقان بين الفتحتين

B → Reflex — في البرد (air inside) هواء بارد

C → Postural — عند النوم على جهة واحدة

More open — وتكون الفتحة المفتوحة

↓

(Rhino - pulmonary Reflex)

II- pathological :-

1 → Congenital

A → Choanal atresia < unilateral / Bilateral

B → atresia of anterior nares

* ملاحظة: Reflex ← B ← وسبب احتقاني ← خارجي

← Partial obstruction يسبب انسداد جزئي

hypertrophy of tubirnate.

Mean Systemic ← pathologyec

2- Traumatic :—

A - Birth trauma

B - External trauma

C - F.B

3. inflamatory :—

A - Rhinitis

B - Septal abcess

4- Non- inflamatory

A - Nasal allergy

B - vaso motor Rhinitis

5- Miscellaneous :—

A - Nasal polyps

B - Rhinitis

C - Medicamentosa

6- Neoplasm

7- General Causes

A - hypertensive drugs

B - hyperthyroidism

C - Smoking

Day / /

& - Mechanical :-

A → DNS (Deviated Nasal Septus)

B → adenoid

→ DNS Most Common in arab County and eurpe than Asia and africa

* Most Common Causes of Nasal obstructu

Adult	child
A- DNS (Mostly)	(Mostly-A) adenoid & Rhinitis
B. hyprtrophic tubir	B - F. B
C - Nasal. allergy	
D - vasomotor allery	
E - polyp	
F - Sinusitis	

or MCQ

* AE of unilateral Nasal obstruction :-

- Congenital → choanal atresia
- infectious → Sinusitis
- Neoplasm
- Miscellaneus → DNS
  → hypertrophic inferior tubir
  → F. B . Rhinolith
  → Antrochoanal polyp

تجارب طلابية

Q1) pdf of sininus ?العطاب

-د. العطاب

- جواب السؤال رقم 10

Q2) management epistasis ?

-د. العطاب

-جواب السؤال 42

Q3)sequels of nose fracture

-العطاب

-جواب السؤال44

Q4)nasal hematoma and abcess different ?

-د. شهاب العواضي

-جواب السؤال 28-29

Q5)types of deveted spetum ?

-العطاب

-جواب السؤال 32

Q6) complication sinius ?

د. العطاب

-جواب السؤال 18

Q7)def and classification rhinitis ?

-د. المحبشي

-جواب السؤال 68+21

Q8)forign body intubation ?

-المحبشي

-جواب السؤال 27

Q9)complication of septoplasty ?

-د. محمد المحبشي

-جواب السؤال 46

Q10) treatment of nasal fracture ?

- د. العطاب

-جواب السؤال 45

Q11) common cold : _cause _ symptoms _ complications. _ ttt →26 جواب

Q12) **2.F.B in nasal cavity → 27 جواب**

Throat

1- Write short account on peri-tonsillar abscess (quinsy) :-

-An abscess in the peritonsillar space between the fibrous capsule of the tonsil usually at it's upper pole and it's muscular bed.

- It occurs usually as a complication of acute tonsillitis.

- Is a recognized complication of tonsillitis and consists of a collection of pus beside the tonsil in what is referred to as peritonsillar space (peri-meaning surrounding).

- It is a commonly encountered otorhinolaryngological (ENT) emergency.

2- D.D of membranous disease over tonsils :-

1- Membranous tonsillitis. 2- Diphtheria. 3- Vincent angina. 4- Infectious mononucleosis.

5- Agranulocytosis. 6- Leukaemia. 7- Aphthous ulcers.

8- Malignancy tonsil. 9- Traumatic ulcer. 10- Candidal infection of tonsil.

3- Signs of chronic tonsilitis :-

1- Congested anterior pillars

2- Flushing of anterior pillars compared to the rest of pharyngeal mucosa.

3- - Asymmetrical enlargement.

4- Irrgular shape.).

5- Enalrgment of jugulodigastric lymph nodes

6- Yellowish beads of pus on medial surface of tonsil (Chronic follicular type).

7- Kissing tonsils (chronic parenchymatous type

4- Differential diagnosis of white patches in tonsil :-

5- Indication of tonsilectomy :-

1- Recurrent acute attack (>3 times/years).

2- One attack of Quinsy.

3- Chronic tonsillitis dysphagia due to hypertrophy.

4- Foreign body (F.B) in the tonsil.

5- Tumor of tonsil (papilloma and carcinoma).

6- Diphtheria carries resistance to treatment.

6- Extra esophageal manifestation of GERD :-

1-cupping → due irritation of diaphragm

2- Non cardiac chest pain.

3 - Globus sensation.

4- Otitis media.

5- Halitosis

6- Dental Erosion.

7- Chronic laryngitis and sore throat.

8- Hoarseness.

8- Chronic cough.

9- Asthma.

10- Aspiration pneumonia. . 7-

7- What are the causes of Progressive dysphagia :-

1- Plummer–Vinson Syndrome.

2- Post-cricoid carcinoma.

3- Carcinoma of the oesophagus.

8- What is plummer vinson syndrome :-

Definition :- It is chronic inflammation of mucosa of the hypopharynx and upper part of the oesophagus occurs in middle aged female.

Is a rare disease characterized by :-

①pallar due anemia (iron defficy anemia)
②koilonychina (spone of nail)
③angular stomatitis and glosstitis
④dyspphagia
⑤ Esophageal web
⑤achlorhydira due atrophy gastic mucus
⑥splenomegly

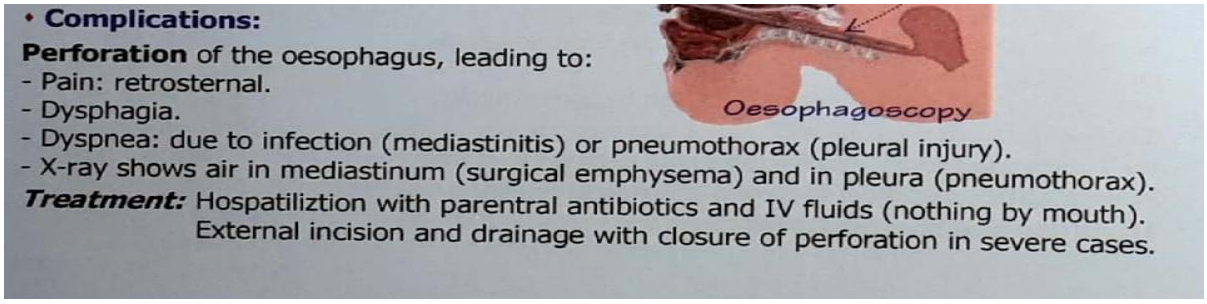
Treatment with :-

1- Iron supplementation.

2- Mechanical widening of the esophagus generally provides an excellent outcome.

9- Indication and contraindication of Oesophagoscopy :-

Indications	Contraindication
A- Diagnostic :-	1- Aortic aneurysm.
1- To examine the esophagus in case of dysphagia.	2- Acute ulceration after corrsives.
2- To take a biopsy.	3- Severe kyphosis.
B- Therapeutic :-	
1- To remove a F.B.	
2- To remove benign tumor by a forceps or by Lazer.	
3- To dilate structures of the esophagus.	


• Complications:
Perforation of the oesophagus, leading to:
- Pain: retrosternal.
- Dysphagia.
- Dyspnea: due to infection (mediastinitis) or pneumothorax (pleural injury).
- X-ray shows air in mediastinum (surgical emphysema) and in pleura (pneumothorax).
Treatment: Hospatiliztion with parentral antibiotics and IV fluids (nothing by mouth).
External incision and drainage with closure of perforation in severe cases.
Oesophagoscopy

.

10- Herpes zoster :-

Is a viral disease characterized by a **painful skin rash** with blisters involving a limited area. Typically the rash occurs on either the left or right of the body or face in a single stripe.
Two to four days before the rash occurs there may be pain or tinglingin the area. Otherwise there are typically few symptoms.

11- Describe adenoid face :-

Is the unusual growth ("hypertrophy") of the adenoid tonsil first described by the Danish physician Wilhelm Meyer (1824-1895) in Copenhagen in 1868.

He described that a long term adenoid hypertrophy will cause an obstruction of the nasal airways.

These will lead to a dento-facial growth anomaly that was defined as "adenoid facies".

12- Symptoms of adenoid hypertrophy :-

Adenoid

Hypertrophy of lymphoid tissue of the nasopharynx sufficient to produce symptoms.

N.B. *It is the commonest nasopharyngeal swelling.*

- **Age:** Childhood period
- **Cause:** Repeated upper respiratory tract infection.
- *CLINICAL PICTURE:*

❖ ***Symptoms:***

1- Effects of hypertrophy:

A) Bilateral nasal obstruction:

- **S**noring and **s**leep apnea.
- Difficult **s**uckling in infants.
- Rhinolalia clausa (nasal tone of voice = hyponasal **s**peech)
- Anterior nasal di**s**charge (bilateral)

B) Eustachian tube obstruction: CHL (conductive hearing loss) due to either: Recurrent AOM or Secretory OM.

C) Adenoid facies:

- Open dry mouth.
- Elevated upper lip.
- Promient central incisors.
- High arched palate.
- Receding lower Jaw.
- Narrow pinched anterior nares.
- Apathetic look.

2- Effects of recurrent infections:

A) Rhinitis and sinusitis.
B) Otitis media.
C) Pharyngitis, laryngitis and bronchitis.

3- General effects:

A) **S**chool retardation (due to deafness + interrupted sleep).
B) Nocturnal enure**s**is.
C) **S**leep apnea.

❖ ***Signs:***

1- Adenoid facies (Mentioned above).
2- Anterior rhinoscopy: narow pinched anterior nares with nasal discharge.
3- Posterior rhinoscopy: postnasal discharge and the adenoid may be seen.

N.B. The adenoid is differntiated from a tumour by the presence of furrows (in the adenoid).

4- Oral cavity: open dry mouth.
5- Nasal endoscopy: can be done for co-operative child.

- *INVESTIGATIONS:*

Plain X-ray (lateral view on nasopharynx) shows narrow nasopharyngeal air column.

X-ray shows adenoid

- *TREATMENT:*

Adenoidectomy (± tonsillectomy if indicated).

√ *Adenoid is the commonest cause of snoring and/or ET obstruction in children*

Nasal symptoms	Aural symptoms	General symptoms
1- Nasal obstruction. 2- Nasal discharge (a wet bubbly nose). 3- Sinusitis. 4- Epistaxis. 5- Voice change (Rhinolalia clausa).	1- Tubal obstruction. 2- Recurrent attacks of acute otitis media. 3- Chronic suppurative otitis media. (May fail to resolve in the presence of infected adenoids). 4- Serous otitis media.	1- Adenoid facies :- a- Elongated face with dull expression. b- Open mouth, prominent and crowded upper teeth and hitched up upper lip. c- Nose gives a pinched-in appearance due to disuse atrophy of alaenasi. d- Hard palate in these cases is highly arched as the moulding action of the tongue on palate is lost. 2- Excessive loud snoring at night. 3- Obstructive sleep apnea. 4- Pulmonary Hypertension. 5- Aprosexia (i.e. Lack of concentration).

13- X-ray lateral view of skull showing adenoid hypertrophy :-

X- ray soft tissue nasopharynx lateral view :-

Reveal size of adenoids, and extent of nasopharyngeal air space compromise.

14- Indication and contraindication of adenoidectomy :-

Indications	Contraindication
1- Adenoid hypertrophy. 2- Obstructive sleep apnea. 3- Obligatory mouth breathing. 4- Chronic mucopurulent nasal discharge and Recurrent rhinosinusitis. 5- Chronic otitis media with effusion associated with adenoid hyperplasia (Myringotomy) 6- Dental malocclusion (Adenoidectomy does not correct dental abnormalities but will prevent its recurrence after orthodontic treatment).	1- Cleft palate or submucous palate. (Removal of adenoids causes velopharyngeal insufficiency in such cases). 2- Haemorrhagic diathesis. 3- Acute infection of upper respiratory tract.

15- Definition and causes of Laryngitis :-

Definition :- Is an inflammation of the larynx.

It causes hoarse voice or temporary loss of the voice due to irritation of the vocal folds (vocal cords).

Laryngitis is one possible cause of dysphonia, the medical term for a vocal disorder.

Causes :-

Infectious	Non-infectious
1- Viral laryngitis can be caused by rhinovirus, influenza virus, Para-influenza virus. 2- Fungal laryngitis can be caused by **Histoplasma**, Blastomyces, **Candida**.	1- Acid reflux disease. 2- Allergies. 3- Inflammation due to overuse of the vocal cords. 4- Excessive or chronic coughing, smoking, or alcohol consumption.

16- Classification of Laryngitis :-

A- Acute Laryngitis :-		**B- Chronic laryngitis**	
A- Acute specific	B- Acute non specific	A- Chronic specific	B- Chronic non specific
Specific diphtheria	1- Laryngitis. 2- Epiglottits. 3- Laryngo tracheobronchitis	1- Specific granuloma. 2- Scleroma. 3- Syphilis 4- TB. 5- Leprosy 6- Fungal infection.	- Atrophic Hypertrophic -Diffuse Localized :- a- Node b- Polyp. c- Leukoplakia.

17- Type of acute specific laryngitis :-

(Only one type) Specific laryngeal Diphtheria.

18- Types of acute non-specific laryngitis :-

1- Laryngitis. 2- Epiglotitis. 3- Laryngo-tracheo-bronchial.

19- Treatment of laryngeal edema :-

A- Medical :- 1- Oxygen inhalation.

2- Hydrocortisone IV act as antiodematous.

B- Surgical :- Trachoestomy or Endotracheal intubation in sever stridor.

20- Treatment of laryngeal Trauma :-

A- Emergency treatment :-	B- Late treatment :-
1- Bleeding Control. 2- Resuscitation airway care (intubation, tracheostomy). 3- Antibiotic. 4- Analgesic. 5- Corticosteroid. 6- Surgical repair of laryngeal cartilage fractures.	1- Treatment of complications. 2- Plastic surgery to correct adhesion and stenosis

21- Complications of laryngeal Trauma :-

Early complication	**Late complication**
1- Bleeding. 2- Airway obstruction due to (blood clot, F.B, cartilage pieces, oeema).	1- Lost of function. 2- Stenosis. 3- Adhesions. 4- Fistula.

22- If present case with larynx where done evaluation it :-

23- Local examination of larynx :-

24- Mention 4 congenital anomalies of larynx :-

1- Congenital web :- (Fibrous band between both V.C).

2- Laryngo-malacia :- (Congenital laryngeal stridor).

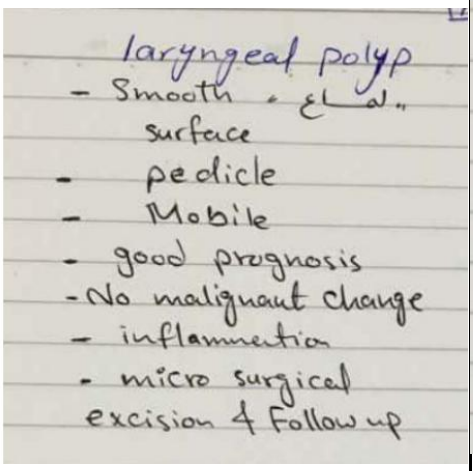
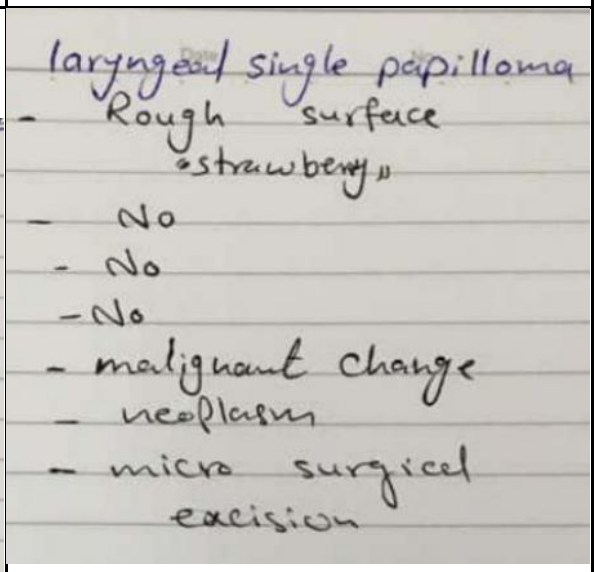
3- Congenital subglottic stenosis.

5- Subglottic haemangioma.

25- Give account on differences between laryngiomalacia and congenital laryngeal web :-

	A- Laryngiomalacia	**B- Congenital laryngeal web**
Definition	It is softening of the epiglottis of the supraglottic area cartilage with redundant mucosa	Persistence of a fibrous membrane between the anterior half of the true vocal cord due to failure complete canalization of the larynx during embryogenesis.
Clinical Presentation	1- Inpiratory stridor. 2- Dyspnea. **3- NO hoarsness of voice.** 4- Stridor improves on change the position of child. 5- Difficulty feeding :- No growth of an infant.	Vary with the size of the web. - Appears after birth. - Hoarseness of voice (main symptom) (high pitch tone). - Inspiratory stridor in severe cases.
Diagnosis	A- History. B- Clinical Examination (Flexible, fiberoptic laryngoscope).	A- History. B- Examination (Flexible, fiber-optic laryngoscope).
Treatment	1- Reassurance (in the majority of cases, change position). 2- Aryepiglottoplasty (supra-glotto-plasty) under General Anesthesia and microlarygoscopy. 3- By laser or laryngeal instruments. 4- Tracheotomy in severe cases.	- NO treatment in milder cases. - Excision by micro- larygoscopy, or by a laser. - External technique with silastic keel insertion (laryngofissure). - Tracheotomy (in severe cases).

26- Difference between laryngeal polyp and papilloma :-

	Laryngeal polyp	**Papilloma**
		

27- Risk factors of laryngeal cancer :-

1- Smoking (the most important risk factor for laryngeal cancer).

Death from laryngeal cancer is 20 times more likely for heaviest smokers than for nonsmokers.

2- Heavy chronic consumption of alcohol (particularly alcoholic spirits, is also significant).

28- Clinical presentation of cancer larynx :-	**Signs**
1- Hoarseness or other voice changes 2- Sore throat.. 3- Lump in the neck. 4- Persistent cough. 5- Bad breath. 6- Ear-ache ("referred"). Difficulty swallowing	1- Neck deformity. 2- Intra-laryngeal mass. 3- Fixed vocal cord. 4- Ulceration. 5- Persistent cough. 6- Bad breath. 7- Ear-ache ("referred"). 8- Difficulty swallowing.

29- Differential diagnosis of cancer larynx :-

1- Laryngeal granuloma.

2- Benign Neoplasma.

30- Protocol of laryngeal tumor Classification :-

TNM Classification and staging :-

T (indicates tumor and its extent).

N (indicates regional lymph node enlargement and its site).

M (indicates distant metastasis)

M0 (Absence metastasis).

M1 (presence metastasis).

Staging of disease helps to compare the results of treatment and assists in the choice of treatment and prognosis of disease.

31- Protocol of cancer larynx Treatment :-

TNM Classification and staging	
Glottic cancer (T1, T2, T3, T4)	T (Is carcinoma in situ). T1 (One or two vocal cord involved with **normal mobility of vocal cord**). T1a (Tumor limited to one vocal cord). T1b (Tumor involves both vocal cord). T2 (Tumor extends to supra or subglottic with normal or impaired mobility vocal cord). T3 (Tumor limited to **larynx with vocal cord fixation**). T4 (Tumor extends to **extra larynx. Beyond larynx**).
Supraglottic cancer (T1, T2, T3, T4)	T (Is ,in situ). T1 (Tumor Limited to **one sub-site of Supraglottic** with normal mobility of vocal cord). T2 (Tumor invades **more than one subsite of supraglottic** with normal or impaired mobility of vocal cord). T3 (Tumor **limited to larynx with vocal cord fixation).** T4 (Tumor **invades the thyroid cartilage and extra-laryngeal structures**).
Subglottic cancer (T1, T2, T3, T4)	T (is. in situ). T1 (Tumor Limited to subglottic area). T2 (Tumor extends to vocal cord with normal or impaired mobility). T3 (Tumor limited to larynx with vocal cord fixation). T4 (Tumor invades crycoid or Thyroid cartilage or tissues beyond the larynx.
Regional lymph nodes (N)	N0 (**No regional lymph node Palpable**). N1 (Metastasis a **single ipsilateral l n 3cm** or less in dimension). N2 (Metastasis to a **single ipsilateral** l n more than 3 cm but none more than 6 cm in dimension, bilateral Or contralateral L.N. none more than 6 cm in dimension). N3 (Multiple ipsilateral, bilateral, contralateral l n more than 6 cm in dimension).

●Specific treatment depends on the **location**, **type**, and **stage** of the tumor.

Treatment may involves :-

A- Non Surgical :- 1- Palliative. 2- Pain killer. 3- Nutrition. 4- Airway care.

B- Surgical :- 1- Tracheostomy partial. 2- Total laryngectomy. C- Radiotherapy or chemotherapy (alone or in combination).

This is a specialized area which requires the coordinated expertise of Ear, Nose and Throat (ENT) surgeons (Otorhino-laryngologists) and Oncologists.

A severely affected patient may require a laryngectomy, the complete or partial removal of the vocal cords.

32- Investigation of larynx :-

1- Indirect laryngoscope. 2- Direct laryngoscope. 3- Flexible laryngoscope.

4- Rigid laryngoscope. 5- Microlaryngoscopy. 6- Stroposcopy.

33- Indication of Direct vs indirect laryngoscope :-

Direct laryngoscope	Indirect laryngoscope

34- Laryngectomy indications and making decision :-

Indications :- 1- T3 and T4 glottic and supraglottic carcinoma.

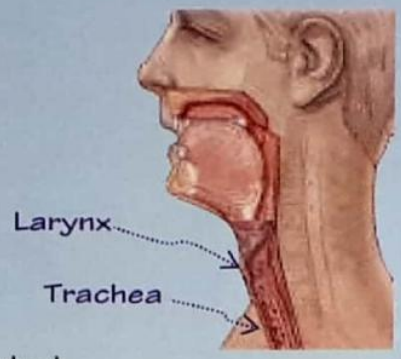
2- All subglottic and transglottic carcinoma.

3- Recurrence after partial laryngectomy.

4- Recurrence after radiotherapy.

Total laryngectomy

Removal of the whole larynx.



Indications:

1- T_3 and T_4 glottic and supraglottic carcinoma.
2- All subglottic and transglottic carcinoma.
3- Recurrence after partial laryngectomy.
4- Recurrence after radiotherapy.

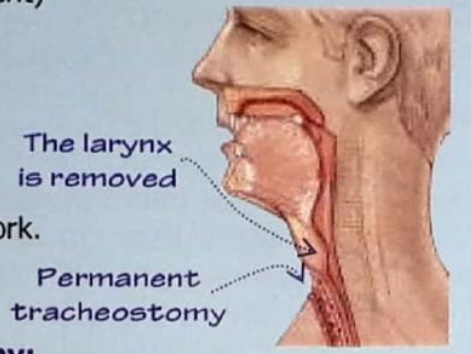
Contraindications:

1- Refusal of the patient to remove his larynx.
2- Extensive tumour fixed to important structure as vertebral column or with distant metastasis (palliative treatment)

Disadvantages:

1- Loss of laryngeal function:

a) Respiratory: Permanent tracheostomy.
b) Protective function: inability to swim.
c) Phonation.
d) Fixation of chest: inability to do heavy manual work.

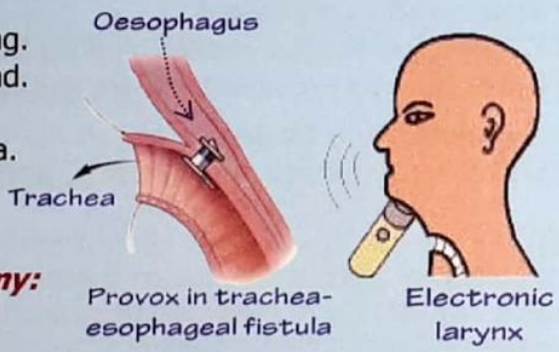


2- Loss of nasal function:

as smell and humidification.

Rehabilitation of voice after total laryngectomy:

By one of the following methods
1- Oesophageal speech: needs speech training.
2- Electronic larynx: hold by the patient's hand.
3- Speaking valve (Provox): introduced in a surgically induced tracheao-esophageal fistula.



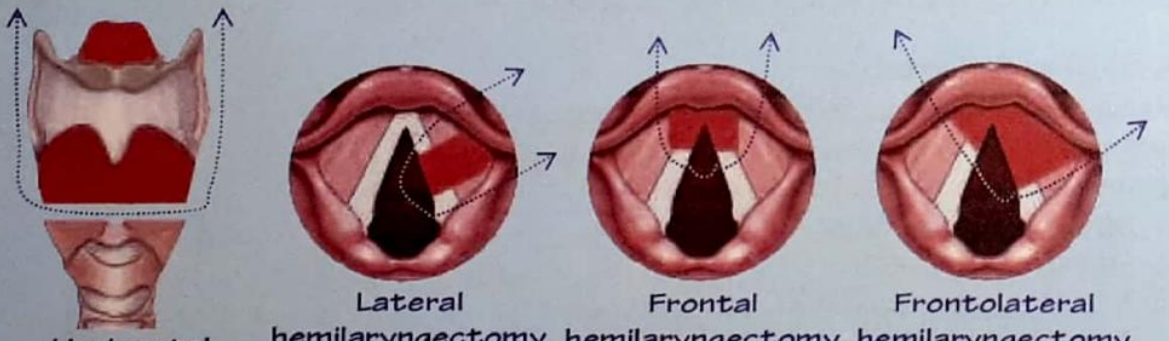
Partial laryngectomy

1- Horizontal (supraglottic) laryngectomy:

In supraglottic carcinoma not reaching to VC.

2- Vertical hemilaryngectomy:

In Glottic carcinoma with mobile vocal cords (T_2).
a) Lateral vertical hemilaryngectomy: In carcinoma limited to middle part of VC.
b) Frontal vertical hemilaryngectomy: In carcinoma limited to anterior commissure.
c) Frontolateral vertical hemilaryngectomy: In carcinoma of VC reaching to anterior commissure.



35- Vocal cords all of it is important :-

36- Definition, causes, symptoms and complications of Pharyngitis :-

Definition :- Is inflammation of the back of the throat, known as the pharynx.

Causes :-

A- Most cases are caused by :- Viral infection.
(Strep throat is the cause in about 25% of children and 10% of adults).

B- Uncommon causes :-
1- Bacteria such as gonorrhea.
2- Fungus.
3- Irritants such as :- a- Smoke. b- Allergies. c- Gastro-esophageal reflux disease

Symptoms :- (Symptoms usually last three to five days).

1- Sore throat. 2- Fever. 3 Headache.
4- Runny nose. 5- Cough. 6- Hoarse voice.

Complications :- 1- Sinusitis. 2- Acute otitis media.

37- Suppuration of spaces of pharynx :-

Four Pharyngeal space for abscess collection :-

	Space
1- Peri-tonsillar abscess	Between upper pole of tonsil and sup-constrictor muscle.
2- Para-pharyngeal abscess	From base of skull into sup-mediastinum.
3- Retro-pharyngeal abscess	Retro-pharyngeal space.
4- Ludwig's angina	- In Sub-mandibular area. - In Floor of mouth.

38- Types of acute specific pharyngitis :-

	1- Diphtheria	**2- Vincent's angina**	**3- Moniliasis**
Causative organism	Coryno-bacterium Diphtheria.	Borrelia and Fusiform bacilli.	Candidia albicans (Fungus).

39- Clinical manifestation of acute pharyngitis :-

1- Milder infections
2- Moderate and severe infections.
3- Very severe cases.
4- Gonococcal pharyngitis is mild and may be asymptomatic

40- Mentions membranes inflammation of pharynx :-

1- Diphtheria 2- Acute follicular tonsillitis 3- Vincent's angina.

4- Moniliasis.

5- Blood diseases :- a- Infectious mononucleosis b- Agranulo-cytosis. c- Leukem

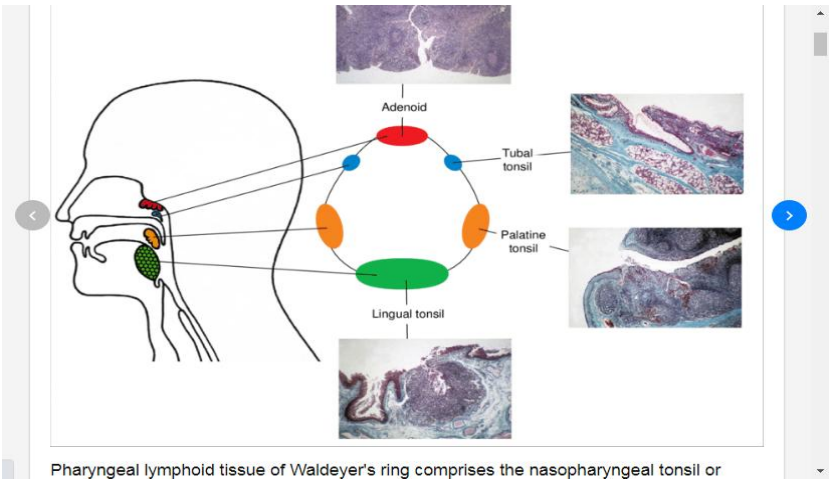
41- Definition and contents of Waldeyer's ring of pharynx with it's function :-

Definition :- Ring of lymphoid tissues present in the sub-epithelial connective tissue in upper Part of aero-digestive tract.

Contents :- 1- Nasopharyngeal L.N. 2- Tubal tonsil. 3- Palatine tonsils.

4- Lingual tonsils. 5- Lymphoid follicles in posterior Pharyngeal wall.

Functions :- It's drained in retro-pharyngeal L.N → Then to upper Deep cervical L.N.



Pharyngeal lymphoid tissue of Waldeyer's ring comprises the nasopharyngeal tonsil or

42- Treatment of Diphtheria pharyngitis :-

1- Hospitalization and isolation.
2- Anti-toxic serum.

3- Antibiotic drugs (Penicillin or erythromycin).

4- Treatment of complications :-

1- Palatal, Pharyngeal and esophageal paralysis → Naso-gastro-tomy (N.G.T).

2-Laryngeal paralysis → Tracheo-stomy.

3- Respiratory paralysis → Artifacial paralysis.

43- Definition and treatment of Ludwig's angina :-

Definition :- A severe form of cellulitis in the submandibular region causing an external swelling below the mandible and an internal swelling in the floor of the mouth.

- Bacterial isolates are often mixed (aerobes and anaerobes).
- Precipitated by dental procedures in 80% of cases.
- Become potentially life-threatening if the inflammatory process spreads to the deep cervical soft tissues and mediastinum.

Treatment :-

A- Medical :- 1- I.V Antibiotics. 2- Analgesic and antipyretics.

B- Surgical :- 1- Secure airway :- (Tracheo-stomy).

2- Incision and drainage for decompression.

44- Clinical picture of Ludwig's angina :-

History of tooth extraction or dental infection.

Symptoms :- 1- Fever. 2- Headache. 3- Malaise.

4-Severe pain over the floor of the mouth with dysphagia and drooling of saliva.

Signs :- 1- Hard tender neck swelling (involving sub-mental and sub-mandibular regions, first indurated the become fluctuating.

2- The overlying skin is red, hot, and edematous.

3- Swollen edematous floor of mouth with the tongue pushed upwards and backwards.

4- Respiratory obstruction and stridor due to laryngeal edema or upwards Displacement of the tongue.

45- In Ludwig's angina the most important thing is :-

Tracheostom

46- Difference between acute follicular tonsillitis and diphtheria :-

	Acute follicular tonsillitis	**Diphtheria**
Past history	Recurrent sore throat with fever.	Contact with Diphtheria patient.
Diphtheria vaccination	Taken.	Not taken.
Age	No age bar.	Children.
Onset	Acute.	Insidious.
Throat pain	Severe.	Mild.
Fever	High grade.	Low grade.
Hoarseness of voice and respiratory distress	Never.	Present in advanced disease.
Neck bull due to cervical lymphadenopathy	Absent.	Not uncommon.
Pulse rate	In proportion to fever.	Out of proportion to fever and weak.
Toxemia	Absent.	Present in advanced disease.
Tonsillar membrane	Limited to tonsil and Easily removed.	- May extend adjacent structure. - Difficult to remove. - Leaves raw bleeding area.
Throat swab	Streptococci.	Coryne-bacterium Diphtheria.
Urine	No albumin.	Albumin often present.
First line of Treatment	Antibiotics.	Anti-Diphtheric serum.
Mortality	Nil.	High.

47- Causes and Treatment of Diphtheria :-

Aetiology :- - It is an acute specific infection caused by the Gram-positive bacillus, Coryne-bacterium diphtheria.
- It spreads by droplet infection.
- Incubation period is 2–6 days.
- Soze persons are "carriers" of this disease (i.e. they harbour organisms in their throat but have no symptoms).

Treatment :-

1- Hospitalization and isolation.
2- Diphtheria antitoxins.
3- Antidiphtheric serum (ADS) is started immediately on clinical suspicion to neutralize the free diphtheria exotoxin.
- Dose depends on the site, duration and severity of disease.

4- Antibiotics :-

a- Benzyl penicillin (600 mg 6 hourly for 7 days).

b- Erythromycin (500 mg 6 hourly orally in penicillin sensitive individuals).

48- Discuss the management of laryngeal diphtheria :- مكرر

1- Hospitalization and isolation.

2- Diphtheria anti-toxins :-

Anti-diphtheric serum (ADS) :- - Is started immediately on clinical suspicion to neutralize the free diphtheria exo-toxin.

- Dose depends on the site, duration, severity of diseases.

3- Antibiotics :- A- Benzyl penicillin 600 mg 6 hourly for 7 days.

B- Erythromycin 500 mg 6 hourly orally in penicillin sensitive individuals.

49- Trotters triad :- (This triad indication **nasopharyngeal carcinoma**).

1- Unilateral facial pain

2- Unilateral soft plate paralysis

3- Unilateral conductive hearing loss.

50- Becks triad :- (Para-pharyngeal abscess). Formed of :-

1- Internal swelling pushing the tonsil medially.

2- External tender swelling on the lateral side of the upper part of neck.

3- Trismus (Inability to open the jaw).

51- Subside for Supraglottic region :-

1- Vestibule (Upper part, above false vocal cord).

2- Ventricle (lower part between false and true vocal cord).

52- Causes of Subglottic Stenosis :-

Congenital or acquired narrowing of the subglottic airway **:-**

A- Congenital causes :-

1- Failure of reconalization of subglottic area.

B- Acquired causes :-

1- Intubation.

2- Bronchoscopy.

3- Tracheotomy.

4- Neck Trauma.

5- Chronic inflammation.

53- Esophageal manifestation :-

A- Heart burn.

B- Chest pain.

54- Supra esophageous manifestation of GERD :-

1- Recurrent pharyngitis with helicobacter pylori.

2- Recurrent laryngitis lead to hoarseness of voice and chocking.

55- Killian's dehiscence :-

A potentially weakened area in the posterior wall of the pharynx which lies between upper oblique fibers (thyro-pharyngeus) and lower transverse (crico-pharyngeus) fibers of the inferior constrictor muscle.

56- Trendelenburg's position :-

When the head is low down during incision of nasopharyngeal abscess.

57- Types of acute specific pharyngitis :- مكرر

	1- Diphtheria	**2- Vincent's angina**	**3- Moniliasis**
Causative organism	Coryno-bacterium Diphtheria.	Borrelia and Fusiform bacilli.	Candidiaalbicans (Fungus).

58- Clinical manifestation of acute pharyngitis :- مكرر بس هنا موضح اكثر

Milder infections	**Moderate and severe infections**	**Very severe cases**
1- Discomfort in the throat. 2- Law grade fever. 3- Congested pharynx.	1- Pain in the throat. 2- Dysphagia. 3- Headache. 4- High fever.	1- Edema of the soft palate and uvula. 2- Enlargement of the cervical lymph node.

Burning of the throat above soft palate is usually the first symptoms.

59- Clinical picture of Ludwig's angina :-

History of tooth extraction or dental infection.

Symptoms	**Signs**
1- Fever. 2- Headache. 3- Malaise. 4- Severe pain over the floor of the mouth with dysphagia and drooling of saliva.	1- Hard tender neck swelling (involving sub-mental and sub-mandibular regions, first indurated the become fluctuating. 2- The overlying skin is red, hot, and edematous. 3- Swollen edematous floor of mouth with the tongue pushed upwards and backwards. 4- Respiratory obstruction and stridor due to laryngeal edema or upwards Displacement of the tongue.

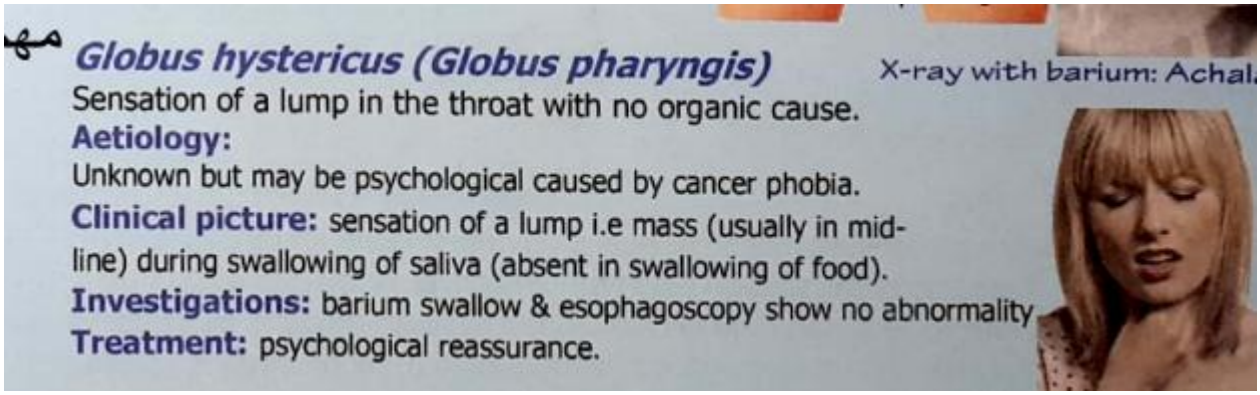
60- Difference between tonsillitis and pharyngitis :-

Tonsillitis	**Pharyngitis**

61- How to differentiated between acute tonsillitis or acute pharyngitis :-

Acute tonsillitis	**Acute pharyngitis**
- Hyperemia in posterior wall of tonsil only (Localized).	Hyperemia and congestion of the all pharynx (Diffuse).

62- Globus hystericus :-


Globus hystericus (Globus pharyngis)
X-ray with barium: Achal
Sensation of a lump in the throat with no organic cause.
Aetiology:
Unknown but may be psychological caused by cancer phobia.
Clinical picture: sensation of a lump i.e mass (usually in mid-line) during swallowing of saliva (absent in swallowing of food).
Investigations: barium swallow & esophagoscopy show no abnormality
Treatment: psychological reassurance.

66- Pharyngeal pouch :-

Zenker's diverticulum, is where the wall of the oesophagus at the lower pharynx, just above sphincter, balloons out under pressure.

67- What are the causes of difficulty of breathing with normal speech :-

A- Congenital causes	**B- Inflammatory causes**
1- Subglottic stenosis. 2- Subglottic hematoma. 3- Congenital cyst. 4- Laryngomalacia. 5- Bi-vocal cord paralysis.	1- Chronic non-specific hyper-trophic laryngitis. 2- Systemic B.A.

68- The suppuration of the 4 pharyngeal spaces (Clinical picture and how to open):-

	Peri-tonsillar abscess	**Retrao-pharyngeal abscess**	**Para-pharyngeal abscess**	**Ludwig's angina**
Symptoms	1- Severe dysphagia and odynophagia. 2- Throbbing pain referred to ear. 3- Trismus. 4- Torticollis.	1- Fever, headache, malaise, anorexia. 2- Dysphagia (difficulty in suckling and swallowing) 3- Foetororis, drooling 4- Stridor. 5- Torticollis.	1- Fever, headache, Malaise. 2- Severe odynophagia	1- Fever. 2- Headache. 3- Malaise. 4- Severe pain over the floor of the mouth with dysphagia and drooling of saliva.
Signs	1- Swelling of the soft palate. 2- The tonsil is pushed downward and medially. 3- The uvula is edematous and pushed to other side. 4- Enlarged tender L.N.	1- Swelling in the posterior pharyngeal wall limited to one side of the midline. 2- Hyperemia and congestion of the posterior pharyngeal wall. 3- Enlarged tender cervical lymph nodes.	Becc'striade :- 1- External tender swelling on the lateral side of the upper part of the neck. 2- Internal swelling pushing the tonsil medially 3- Trismus.	1- Hard tender neck swelling (involving sub-mental and sub-mandibular regions, first indurated the become fluctuating. 2- The overlying skin is red, hot, and edematous. 3- Swollen edematous floor of mouth with the tongue pushed upwards and backwards. 4- Respiratory obstruction and stridor due to laryngeal edema or upwards Displacement of the tongue.
How to open	**Internal incision** (most pointing point or mid-point between uvula and last other molar).	Acute :- **Internal incision**, vertical with head low down. Chronic (Cold abscess) :- **External incision** along the **posterior** border of sternomastoid.	External incision along **anterior** border of sternomastoid.	

Peri-tonsillar abscess

Symptoms	**Signs**	**How to open**
1- Severe dysphagia and odynophagia. 2- Throbbing pain referred to ear. 3- Trismus. 4- Torticollis.	1- Swelling of the soft palate. 2- The tonsil is pushed downward and medially. 3- The uvula is edematous and pushed to other side. 4- Enlarged tender L.N.	**Internal incision** (most pointing point or mid point between uvula and last other molar).

Retrao-pharyngeal abscess

Symptoms	Signs	How to open
1- Fever, headache, malaise, anorexia. 2- Dysphagia (difficulty in suckling and swallowing) 3- Foetororis, drooling 4- Stridor 5- Torticollis	1- Swelling in the posterior pharyngeal wall limited to one side of the midline. 2- Hyperemia and congestion of the posterior pharyngeal wall. 3- Enlarged tender cervical lymph nodes.	Acute :- Internal incision, vertical with head low down. Chronic (Cold abscess) :- External incision along the posterior border of sternomastoid.

Para-pharyngeal abscess

Symptoms	Signs	How to open	
1- Fever, headache, malaise. 2- Severe odynophagia	Becc'striade :- 1- External tender swelling on the lateral side of the upper part of the neck. 2- Internal swelling pushing the tonsil medially 3-Trismus	External incision along anterior border of sternomastoid.	

Ludwig's angina

Symptoms	Signs	How to open
1- Fever. 2- Headache. 3- Malaise. 4- Severe pain over the floor of the mouth with dysphagia and drooling of saliva.	1- Hard tender neck swelling (involving sub-mental and sub-mandibular regions, first indurated the become fluctuating. 2- The overlying skin is red, hot, and edematous. 3- Swollen edematous floor of mouth with the tongue pushed upwards and backwards. 4- Respiratory obstruction and stridor due to laryngeal edema or upwards Displacement of the tongue.	

69- Classification of (Rhinitis, Laryngitis and Pharyngitis) :-

Inflammation	**Rhinitis**	**Laryngitis**	**Pharyngitis**
Acute specific	Diphtheria	Diphtheria	- Diphtheria - Vincent angina - Moniliasis.
Acute non-specific	- Influenza - Common cold - Acute rhinitis	- Acute epiglottitis - Laryngeo-tracheo-bronchitis - Acute laryngitis	Acute pharyngitis
Chronic specific	- T.B - Leprosy - Syphilis - Rhino-scleroma.	- T.B - Leprosy - Syphilis - Laryngio-scleroma.	- T.B - Leprosy - Syphilis - Pharyngio-scleroma.
Chronic non-specific	- Atrophic rhinitis - Hypertrophic rhinitis.	- Atrophic Laryngitis - Hypertrophic Laryngitis	- Atrophic pharyngitis. - Hypertrophic pharyngitis.

70- Sphenopalatine fossa usually contain angiofibroma origin :

71- Rhosin molar fossa

72- Paralysis of pharynx :-

73- Reink space :-

74- Medial and lateral relation to tonsil (Oral Questions) :-

75- Ulcers of the mouth (Mention the causes of ulcers in the pharynx) (Write it in the way of congenital, traumatic, inflammatory, neoplasm) :-

سؤال اختبار

Ulcers of the mouth and pharynx (Stomatitis)

Ulcer is the loss of continuity (interruption) of the surface epithelium.

Causes:

1- Traumatic:

a- Mechanical:
- Lacerating injury.
- Maldirected tooth.

b- Chemical: Corrosives.

c- Physical: Radiotherapy.

Vesicles → Rupture → Ulcers

2- Inflammatory:

a. Acute:

I. Viral
- Herpes simplex (Herpes simplex virus)
- Herpes zoster (Chickenpox virus)
- Herpangina (Coxsakie virus).

All characterized by: vesicles which rupture causing ulcers.
Herpes simplex affects anterior part and herpangina affects posterior part of the pharynx
Herpes zoster accompanied by vesicles and pain (neurotropic virus).
- AIDS: may lead to persistent ulcerations with moniliasis and gingivitis.

II. Bacterial:
- Severe pharyngitis and tonsillitis.
- Diphtheria.
- Vincent's angina.
- Cancrum oris: gangrene of the mouth floor

III. Fungal: Moniliasis

Punched out = Syphilis
Undermined = T.B.
Everted = Malignant

b. Chronic:
- T.B.: The ulcer has undermined edge.
- Syphilis:

1ry: Chancre.
2ry: Snail track ulcer and mucous patches.
3ry: Ulcer with punched out edge.

c. Dyspeptic (aphthous ulcers): the exact cause is unkown
Multiple, small, painful, recurrent and yellowish ulcers associated with GIT troubles.

3- Neoplastic:

Malignant ulcer: raised everted edge, irrigular necrotic floor and indurated base.

4- Blood diseases:

a. Agranulocytosis: Oropharyngeal ulcers surrounded by little inflammatory reaction.
b. Leukaemia: Oropharyngeal ulcers with lymphadenophthy, pallor, bleeding tendency
c. Infectious mononucleosis: Oropharyngeal ulcers with lymphadenopathy, fever and palatal petichiae with +ve Paul-Bunnel test.

5- Skin diseases:

a. Pemphigus: autoimmune disease with bullae which rupture causing ulcers
Biopsy: intraepithelial lesion + acantholysis.

b. Pemphigoid: similar to pemphigus but the bullae are deep
Biopsy: subepithelial lesion + no acantholysis.

c. Behcet's disease:
Oropharyngeal ulcers.
Genital ulcers.
Iridocyclitis.

d. Drug eruptions: hypersesitivity reaction leading to vesicles that may ulcerate.

77- T.B is located posteriorly in larynx .... Whay :-

4 causes :-

1- The mucosa is folded posteriorly.

2- The mucosa is not firmly adherent to the epiglottitis cartilage.

3- Pyriform fossa (clinically lymph nodes enlargement precede dysphagia).

4- Higher level.

78- F.B (Coin swallowing) :-

Note :-

- **Vocal cord is more important than the epiglottis in protection because it make a complete seal not partial as the epiglottis....**

- **Apple core filling defect and rat tail esophagus appearance in X-ray... When?** (MCQ)

- **Cleft palate** (MCQ)

- **Pyriform fossa carcinoma .....**

(Early symptoms are the L.N enlargement and pain in the ear)

- **All infection can make perforation in cartilaginous septum EXCEPT One :-**

Syphilis because it make bone perforation.

تجارب الطلاب للدفع السابقة

Q1)congential stridor ?

Answer :- number 24

Q14) waldery ring ?

-answer number :- 41

Q8)back traid ?

-answer :- number 50

---

q)signs of chronic tonsilits ?

-answer number :- 3

---

q)different between dipatria and tonsilits ?

-nuber 46

---

q) DD of membrance tonsilits ?

-number 40

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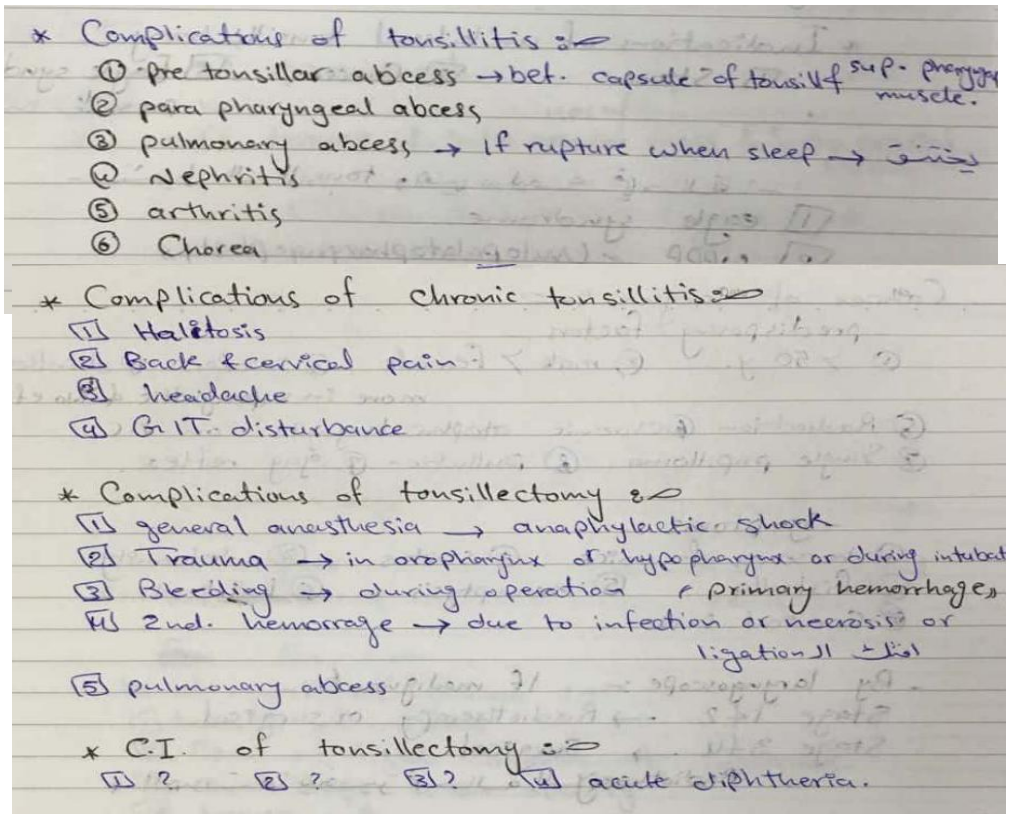
q) Q11)complication endotracheal

answer number 9

Q7)compilation acute tonsillitis ?


* Complications of tonsillitis :-
① pre tonsillar abcess → bet. capsule of tonsil & sup. pharyng muscle.
② para pharyngeal abcess
③ pulmonary abcess → if rupture when sleep →
④ Nephritis
⑤ arthritis
⑥ Chorea
* Complications of chronic tonsillitis :-
[1] Halitosis
[2] Back & cervical pain
[3] headache
[4] G I T. disturbance
* Complications of tonsillectomy :-
[1] general anesthesia → anaphylactic shock
[2] Trauma → in oropharynx or hypopharynx or during intubat
[3] Bleeding → during operation & primary hemorrhage
[4] 2nd. hemorrage → due to infection or necrosis or ligation
[5] pulmonary abcess
* C.I. of tonsillectomy :-
[1] ? [2] ? [3] ? [4] acute diphtheria.

Tonsillectomy مهمة جداً

- ***Indications:***

1. Recurrent acute attack (more than 3 times/year).
2. One attack of quinsy (Once quinsy always quinsy, it is an old concept, recently in recurrent quinsy)
3. Chronic tonsillitis causing:
- Snoring and sleep apnea due to hypertrophy (the only absolute indication).
- Dysphagia due to hypertrophy.
- Persistent enlarged jugulodiagstric lymph nodes (may be TB)
- Septic focus.
- Rheumatic fever or glomerulonephritis.
4. Diphtheria carrier: resistant to medical treatment.
5. Tumour of tonsil: either
- Benign: papilloma.
- Malignant: carcinoma or lymphoma.

- ***Contraindications:***

A. Absolute:
Bleeding disorders as haemophilia, purpura, or leukaemia
B. Relative: should be relieved before operation
1. Acute tonsillitis.
2. Acute upper respiratory tract infection as common cold.
3. Active systemic disease (as diabetes).
4. Active rheumatic fever (↑ ESR). 6-pandemic of covid 19
5. Menstruation: during menses. 7-poliol endemic

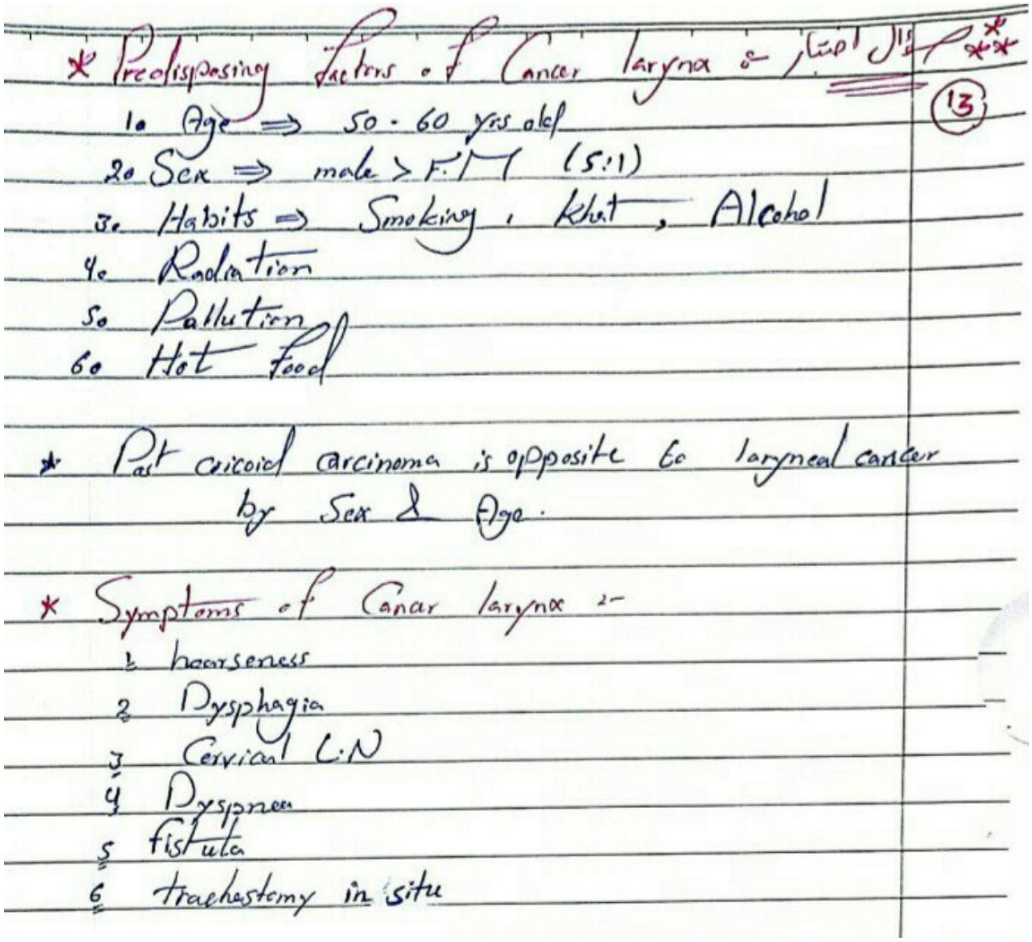
- ***Complications:*** *HI RI AI*

[1] Haemorrhage: It may be
a. Primary: during the operation.
It is due to inadequate preparation as bleeding disorders or acute infections.
Treatment: Ligation or diathermy of the bleeding vessels
or Fresh blood transfusion in bleeding disorders.
b. Reactionary: within 24 hours.
It is due to elevation of blood pressure (normalization) after recovery from anaesthesia.
Treatment: In mild cases: local haemostatic pressure.
In severe cases: reanaesthesia and ligation or diathermy of the vessels.
c. Secondary: within 10 days.
It is due to wound infection that causes vascular necrosis.
Treatment: Antibiotics and sedation,
Reanaesthesia (in severe cases) → insertion of gauze pack in tonsillar bed and ligation of pillars over it for 48 hs. Ligation of bed is avoided as the tissue is friable (ligation of ECA can be done).

[2] Respiratory: either
a. Respiratory obstruction by:
- Laryngeal spasm after extubation due to inhalation of blood or vomitus:
Treatment: by suction of blood and O_2 inhalation.
- Falling of tongue backwards:
Treatment: by pulling the tongue and insertion of plastic oral airway.
b. Respiratory infection: Bronchitis, pneumonia, or lung abscess.
[3] Anaesthetic complications: **A**naphylactic shock.
Apnea (succinyl apnea).
Arrest (cardiac arrest).
[4] Incomplete removal:
Causes haemorrhage or compensatory hypertrophy of remnants.
[5] Injury: To palate, tongue or teeth.
[6] Infection:
- Wound infection causing secondary haemorrhage.
- Respiratory infection.
- Parapharyngeal abscess.

Respiratory obst. is a serious complication

Q3)pdf of laryngeal cancer ?



* Predisposing factors of Cancer larynx
13

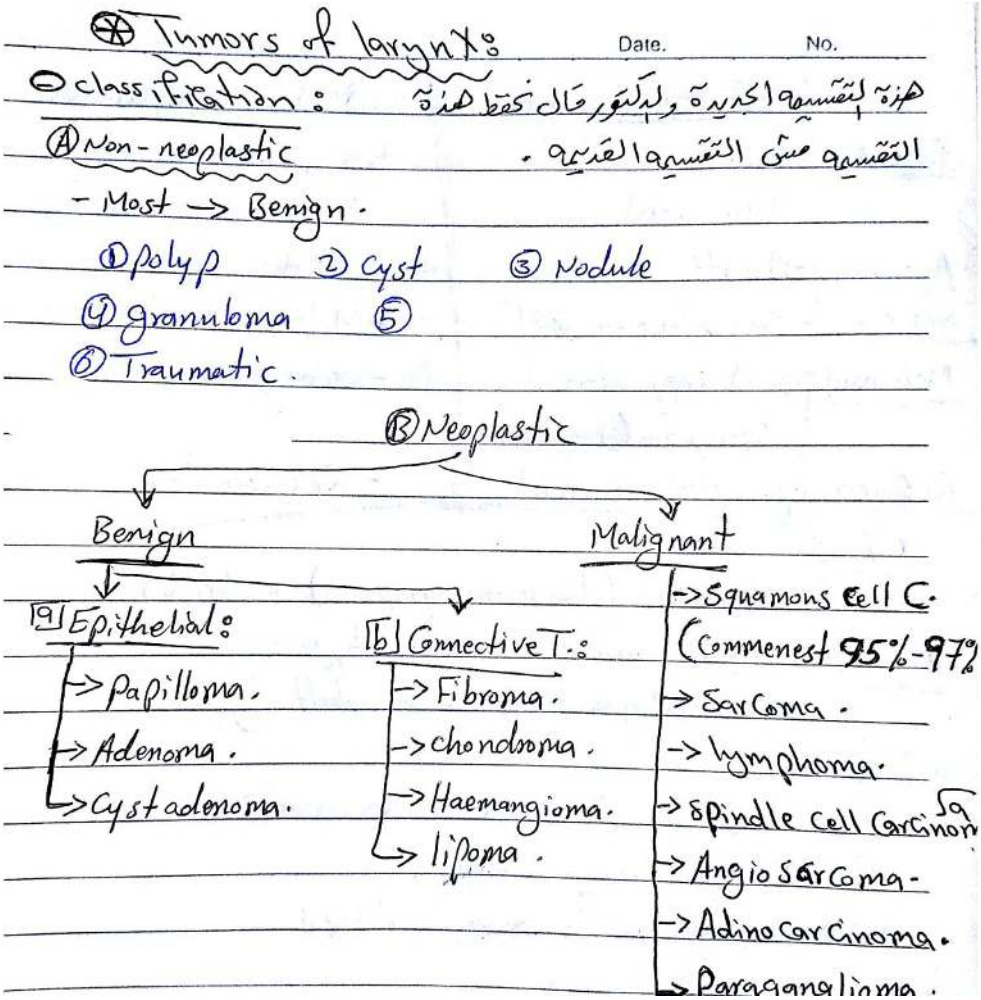
1. Age ⇒ 50 - 60 yrs old
2. Sex ⇒ male > F.M (5:1)
3. Habits ⇒ Smoking, Khat, Alcohol
4. Radiation
5. Pollution
6. Hot food

* Pat cricoid carcinoma is opposite to laryngeal cancer by Sex & Age.

* Symptoms of Canar larynx :-

1. hoarseness
2. Dysphagia
3. Cervical L.N
4. Dyspnea
5. fistula
6. tracheostomy in situ

Q2)clasffiction larynx tumor?



Q6)largeal papiloma ?

Papilloma:

Cause: Both types caused by Human papilloma virus

Types: -> Single or adult type
↳ Multiple or juvenile type.

	Single papilloma	Multiple papilloma
Site:	- Anterior half of vocal cord	- anywhere in the larynx, trachea.
Age:	- Adult	- child.
Sex:	- Male > Female (2:1)	- Male > Female
Malignant:	-> change into sarcoma.	- No
Recurrence:	-> Not recurrent	- Recurrent.

C/P:
↳ Hoarseness (the main symptom) + stridor.

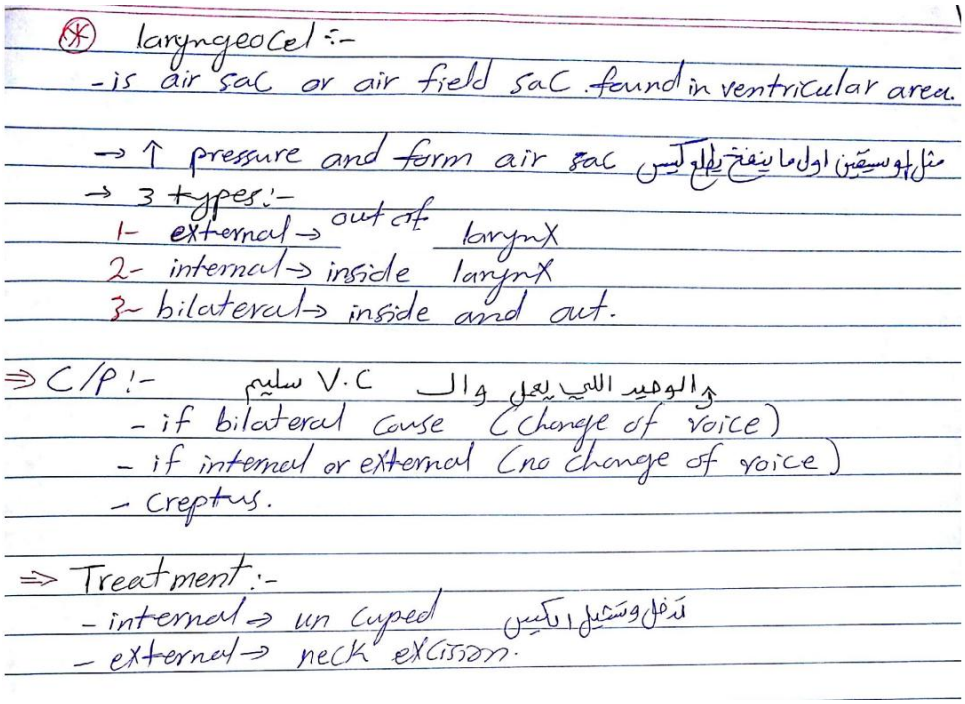
* Prognosis: -> Recurrent in juvenile type.
↳ Malignant change in adult type.

* Diagnosis:
(a) Clinically by history and examination.
(b) Fibroptic laryngoscope.
(c) Histopathological study for HPV

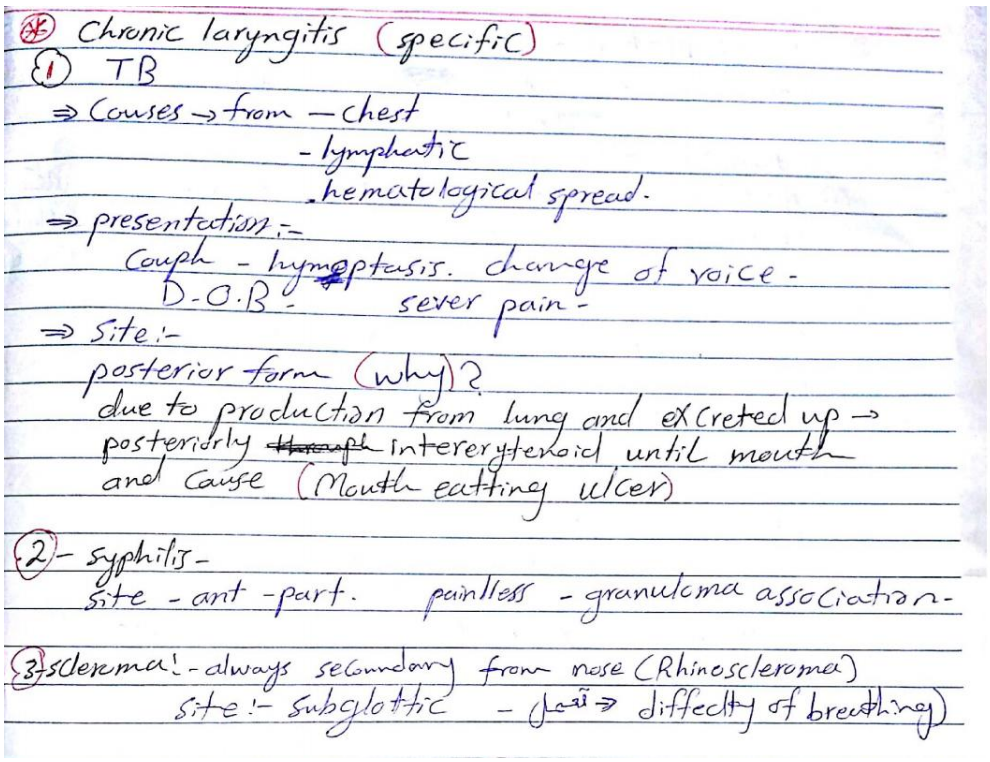
* D.D. of adult type:
(1) Inflammatory granuloma: as T.B, Syphilis, laryngoscleroma.
(2) Inflammatory polyp: which is characterized by smooth surface, intact mucosa, pedunculated while in papilloma is irregular surface, strawberry colour, sessile.

* Management: Date. No.
(A) Medically: Interferon injection has good result but bad side effects.
(B) Surgicall:
- Tracheostomy: until puberty as some cases improve in puberty.
- If not improved do -> Micro laryngo surgery or laser

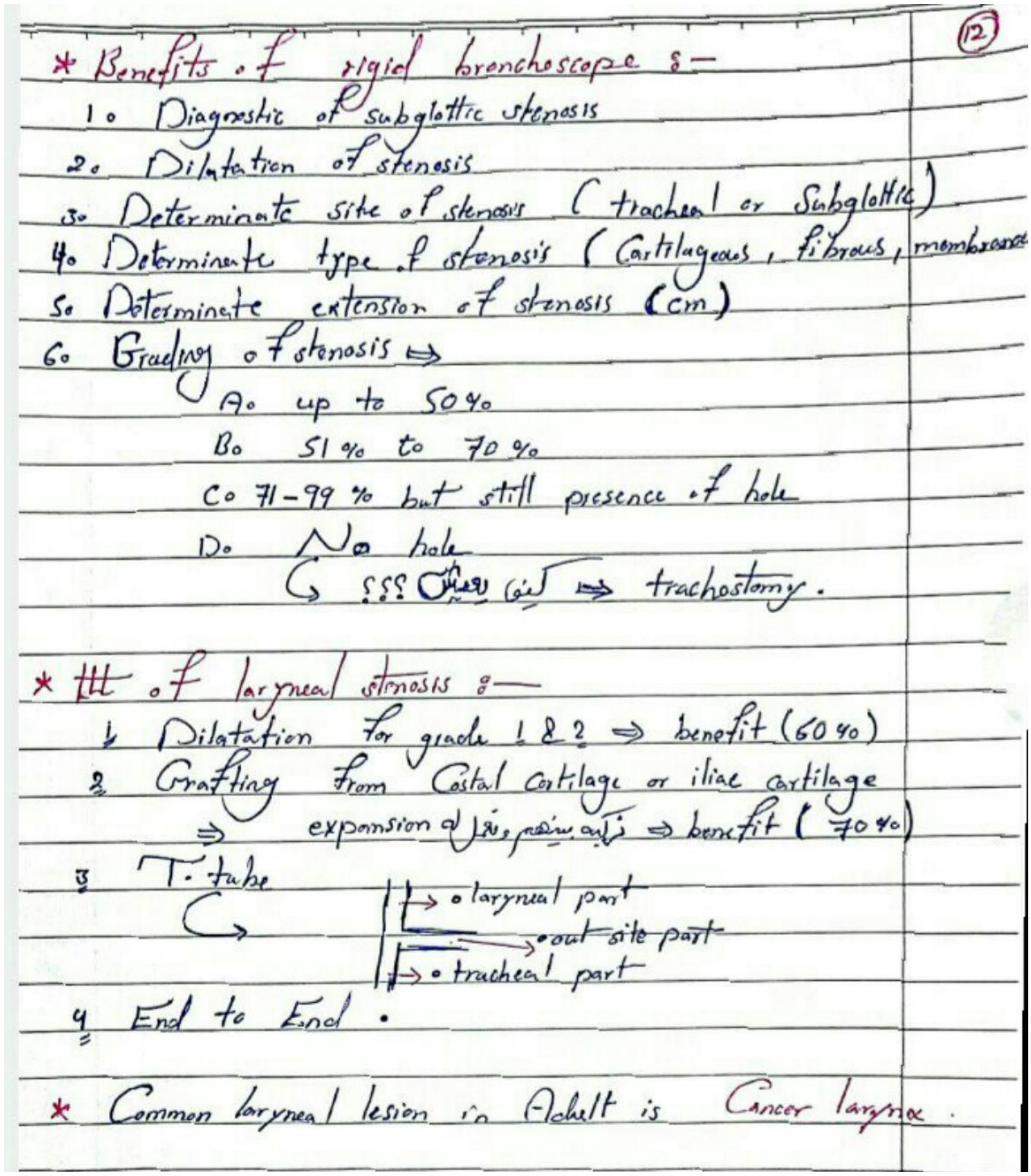
Q5)def+ cuses + type + treamten of largeal cele?


laryngeocel :-
-is air sac or air field sac found in ventricular area.
→ ↑ pressure and form air sac
→ 3 types :-
1- external → out of larynx
2- internal → inside larynx
3- bilateral → inside and out.
⇒ C/P :- V.C
- if bilateral cause (change of voice)
- if internal or external (no change of voice)
- Creptus.
⇒ Treatment :-
- internal → un cuped
- external → neck excission.

Q4)largeal TB casue + CP +complication


Chronic laryngitis (specific)
① TB
⇒ Couses → from — chest
- lymphatic
- hematological spread.
⇒ presentation :-
Cough - hymoptasis. change of voice -
D.O.B - sever pain -
⇒ Site :-
posterior form (why)?
due to production from lung and excreted up →
posteriorly through intererytenoid until mouth
and cause (Mouth eatting ulcer)
② - syphilis -
site - ant - part. painless - granuloma association -
③ scleroma :- always secondary from nose (Rhinoscleroma)
site :- subglottic - ⇒ diffecilty of breathing)

Q12) grade largeal stenosis ?



(12)

* Benefits of rigid bronchoscope :-
1. Diagnostic of subglottic stenosis
2. Dilatation of stenosis
3. Determinate site of stenosis (tracheal or Subglottic)
4. Determinate type of stenosis (Cartilagenous , fibrous , membranous
5. Determinate extension of stenosis (cm)
6. Grading of stenosis ⇒
   - A. up to 50%
   - B. 51% to 70%
   - C. 71-99% but still presence of hole
   - D. No hole
     - ↳ ??? ⇒ tracheostomy.

* ttt of laryneal stenosis :-
1. Dilatation for grade 1 & 2 ⇒ benefit (60%)
2. Grafting from Costal cartilage or iliac cartilage
   ⇒ expansion ⇒ benefit (70%)
3. T. tube
   - ↳ laryneal part
   - out site part
   - tracheal part
4. End to End .

* Common laryneal lesion in Adult is Cancer larynx .

Q9)common complication parapharnagal abcess ?

❖Complications: ➢

-Spread of infection posterior (retrophargeal abscess)

-Spread of infection downwards to the larynx (laryngeal edema)

Vocal Cord Paralysis

- تقسمه ثاني للعضلات :-
1-extransic :- cirothyroid
2-intransic :- all muscle

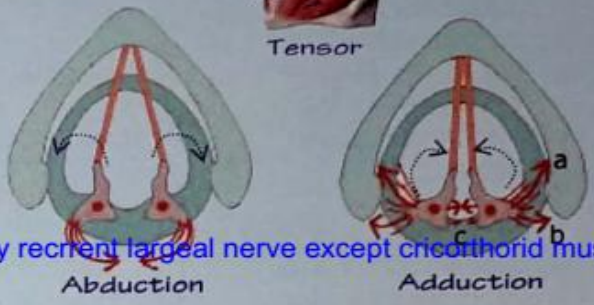
عضلات تشد

• Muscles of the Larynx:

1- Tensor: Crico-thyroid muscle
It increases the tension of VC → higher the voice pitch.
It has also some adductor action.

2- Abductor: Posterior crico-arytenoid muscle.
It opens the glottis in inspiration.

3- Adductors:
a. Thyro-arytenoid muscle.
b. Lateral crico-arytenoid muscle.
c. Inter-arytenoid muscle.
They close the glottis in phonation and swallowing.



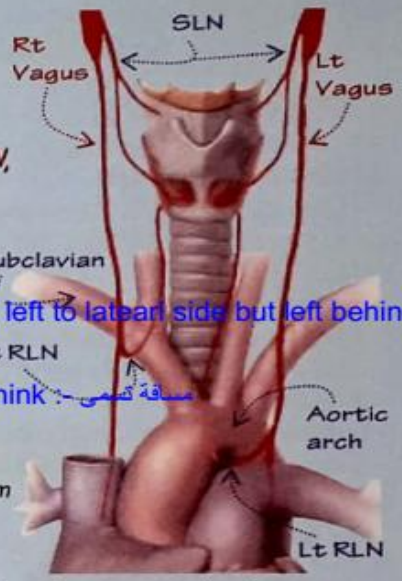
• Nerve Supply:

all muscle supply by recrrent largeal nerve except cricothorid muscle

Via vagus nerve by 2 branches

a. Superior laryngeal nerve (SLN):
- Motor to cricothyroid muscle (via External branch).
- Sensory to mucosa above VC (via Internal branch).

b. Recurrent laryngeal nerve (RLN):
- Motor to all laryngeal muscles except cricothyroid.
- Sensory to mucosa below VC.



N.B. *The left RLN has a longer course than the right RLN, as the left enters the chest and turns around the Aortic arch while the right does not enter the chest and turns around the subclavian artery at the root of the neck. So the left one is more liable to be paralysed.*

but in throid ectory the right more injure than right due to left to latearl side but left behind

• Positions of vocal cords:

chink :-

chink :- مسافة تسمى

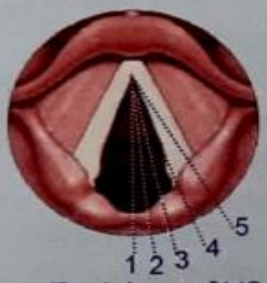
1. *Median: VC is in midline position* (chink = 0 mm).
2. *Paramedian: VC is in paramedian position* (chink = 4 mm).
3. *Cadaveric: VC is in intermediate position* (chink = 8 mm).
4. *Abduction: VC is in abduction position* (chink = 14 mm).
5. *Full abduction: VC is in full abduction position* (chink = 18 mm

• Explanation of positions:

Wagner and Grossman theory

Injury of vagus → Cadaveric position (All muscles are paralysed → intermediate)
Injury of RLN → Paramedian position (as the crico-thyroid has some adductor action and it is supplied by SLN → some adduction = paramedian).
Semon's law: the abductor muscle is usually affected before the adductors (Old theory).

• Causes of vocal cord paralysis:



1- Intracranial (i.e. central):
a. Traumatic: head trauma or car accident.
b. Inflammatory: meningitis or encephalitis.
c. Neoplastic: brain tumour.
d. Vascular: thrombosis, haemorrhage or embolism (THE).
e. Degenerative: multiple sclerosis (MS).

✓ *N.B. The chink is the airway space between both true VC*

2- Cranial (i.e. skull base at jugular foramen= jugular foramen syndrome):
Injury of vagus at its exit from jugular foraman, it may involve the lower 4 cranial nerves.
a. Traumatic: Fracture base of the skull.
b. Inflammatory: Malignant otitis externa.
c. Neoplastic: Carcinoma of nasopharynx, glomus tumour.

3- Extracranial:

a. In the neck:

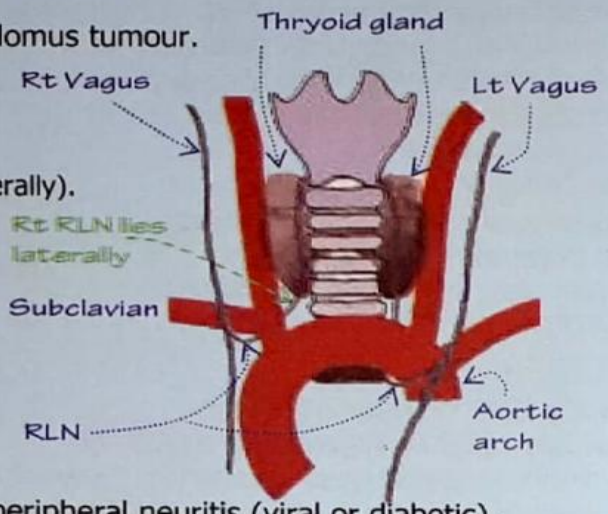
- Thyroid operations

(Right RLN is more liable for injury as it lies laterally).

- Cancer thyroid.
- Malignant lymph nodes.
- Neck injury.
- Cancer oesophagus

b. In the chest (left only):

- Bronchogenic carcinoma.
- Cardiothoracic operations.



4- Idiopathic:
In 25% the cause is unknown but may be peripheral neuritis (viral or diabetic).

✓ *A patient with left VC paralysis and free head and neck = ? bronchogenic carcinoma*

• *Clinical Picture:*

❖ *Symptoms:*

Unilateral paralysis:

* Hoarseness: which improves spontaneously after 6-12 months as the healthy cord cross the midline to meet the paralysed cord (compensation).
* No stridor.

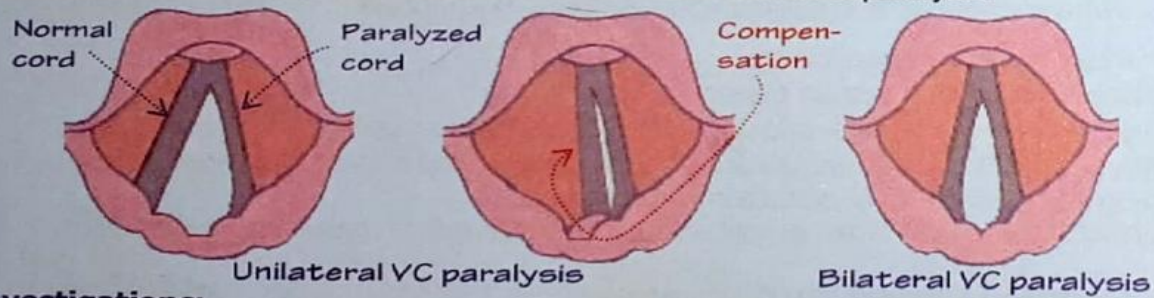
b bilateral : abductor paralsyis --> striodro , bilateal adductor --> chooking

Bilateral paralysis:

* Stridor: due to narrowing of the glottis by both immobile cords (narrow chink).
* The voice is relatively good (No hoarseness, as both cords present near midline).

❖ *Signs:*

- Examination of the larynx: indirect or flexible laryngoscopy to detect the position of VC.
- Examination of the head, neck and chest: to detect the cause of paralysis.



• Investigations:

- **CT:** from the skull base to the mid-thorax (to detect any tumour mass).
- **Barium swallow:** if cancer oesophagus is suspected.
- **Thyroid scan:** if cancer thyroid is suspected.
- **Panendoscopy:** All endoscopies (Naso, laryngo, Hypopharyngo, oesophago, and bronchoscopy) and take a biopsy from suspicious lesion especially in unilateral cases.
- **Stroboscopy:** Intermittent flashes of light coinciding with VC movement to see the mucosal waves. This is done by the use of flexible laryngoscopy.

• *Treatment:*

Unilateral Paralysis:

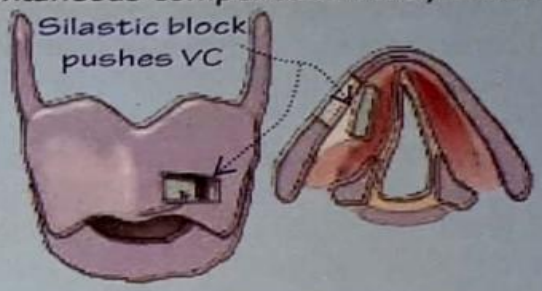
1. **Treatment of the cause** (if present): as tumour e.g. bronchogenic carcinoma.
2. **Wait 6-12 months** before intervention as spontaneous compensation may occur.
3. **Surgical treatment:**

- *Indications:*

No compensations after 6-12 months.

- *Aim:* نعمل تثبيت للوسط

Medial displacement and fixation of the paralysed cord in the midline (to improve voice).



Lateralization thyroplasty

- *Types of operations:*

a- Teflon injection lateral to the paralysed cord.
b- Medialization thyroplasty (medial displacement of the paralysed cord by implant).
c- Reinnervation procedures which is called Tucker's operation (not useful).

Bilateral paralysis:

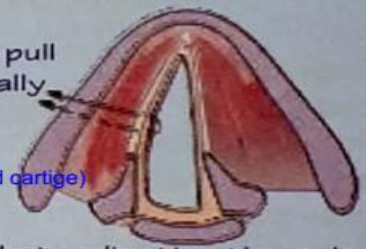
1. **Tracheostomy:** if there is severe stridor.
2. **If detected at the end of thyroidectomy →** **re-exploration** as the nerve may be taken in a ligature.
3. **Surgical treatment:**

- *Aim:*

Lateral displacement of one of the paralysed cords to improve the airway.

- *Types of operations:*

a- Arytenoidectomy ± posterior cordectomy:
(done by Laser microlaryngsurgery).
b- Woodman's operation: arytenoidectomy + cordopexy
(via external approach). arytenoidectomy + cordpexy (تثبيت in throid cartige)
c- Lateralization thyroplasty (pulling VC laterally by sutures).
d- Reinnervation procedures (Tucker's operation is not useful).



Lateralization thyroplasty

✓ *After thyroidectomy: a patient developed* *Hoarseness = ? unilateral RLN injury,*
Stridor = ? bilateral RLN injury.

Laryngeal oedema edema below mucus of larynx --> stridor

• **Causes:**

1- Traumatic: mechanical, chemical and physical.

2- Inflammatory:

- Acute: specific and non-specific especially in children.
- Chronic specific: granuloma obstructing lymphatic vessels.
- Extension of oedema from pharyngeal suppurations.

3- Neoplastic: Tumour obstructing lymphatic vessels.

4- Miscellaneous:

- Angioneurotic oedema as allergy.
- Cardiac, Renal and Hepatic oedema (in failure).

• **Clinical picture:**

Symptoms: Stridor.
Hoarseness.
Signs: Indirect or flexible laryngoscopy shows oedema of laryngeal mucosa.

• **Treatment:**

Medical: Oxygen inhalation and antioedematous drugs as hydrocortisone injection (IV)
Surgical: Airway saving by tracheostomy or endotracheal intubation in severe stridor.

Q13) catarrhal child and causes ?

The Catarrhal Child

- Nasal obstruction and discharge in children

* Causes
1- Adenoid → Most Common Cause
2- recurrent Chronic rhinitis
3- Nasal allergy
4- Sinusitis
5- Congenital choanal atresia
6- Nasal foriegn body.

* Complications
1- Sinusitis, Pharyngitis, otitis media
2- Laryngitis, Laryngeotracheobronchitis
3- Pneumonia
4- Permanent anosmia

Q11).treatment of laryngeal trauma complication of laryngeal trauma?

❖ Trauma of the larynx :

- External :
  - Closed wound
  - Opened wound Accidental R.T. Fire arm,stab wound
  - Radiation to the neck
  - operations .e g.tracheotomy, neck dissection, thyroid operation
- Internal :
  - Iatrogenic intubation
  - Laryngobronchoscopy
  - F.B Inhalation, hot fume
  - Corrosive fluid swallowing

Pathology:
the degree and severity of damage will vary from slight bruises externally or the tear and laceration of mucosa internally to a comminuted fracture of laryngeal frame work.
1.Oedema and haematoma of the larynx,
2.Tear in laryngeal or pharyngeal mucosa leading to subcutaneous emphysema.
3.dislocation of laryngeal joints.
4.fractures of the hyoid bone and laryngeal cartilages.
5. separation of the larynx from trachea.
6. recurrent laryngeal nerve injury.

Clinical features:
According to causes:

✓ Symptoms:

1.respiratory distress. 2.Hoarsness of voice or aphonia
3.odynophagia. 4.local pain in the larynx. 5.Haemopt

✓ Signs

1.Bruises, or abrasions over skin, 2.Tenderness over the larynx.
3.subcutaneous emphysema. 4.Flattening of thyroid prominence.
5.Bony crepitus of the larynx.

✓ Diagnosis

History and physical examination. 1. Indirect laryngoscope.
2.Direct laryngoscope.
3.X-rays---soft tissue lateral view of the neck. 4. C T scan it is very valuable in assessing injuries of larynx.

✓ Complications:

Early.>-
Bleeding, airway obstruction due to?blood clot, f.b ,cartilage pieces, oeadema.
Late.>
Lost of function, stenosis, adhesions, and fistula.

Treatment:
Emrgency treatment:
_Bleeding control, resuscitation airway care (intubation, tracheostomy)
-Antibiotic, analgesic, corticosteroid.
-Surgical repair of laryngeal cartilage fractures.

Late treatment.
treatment of complications.
Plastic surgery to correct adhesion and stenosis

1.D.D of caner larynx

❖ **NON NEOPLASTIC (PSEUDOTUMOURS):**

1) Inflammatory
2) Traumatic
3) Degenerative
   a) Polyp
   b) V.C.Nodule
4) Granulomas

❖ **NEOPLASTIC** :

☒ **BENIGN**

1) Papilloma
2) Chondroma
3) Fibroma
   a) Heamangioma
   b) Lipoma
4) Rhabdomyoma - bengin OR malignant?

☒ **MALIGNANT**

1) SCC
2) Sarcoma
3) Lymphomas
   a) Spindle Cell CA
4) Paraganglioma –bengin OR malignant?

Q10)care of upper air way obstruction ?

-step by step :-

1- cortsion

2-endotracial tube

3-trachiostomy

q) stridor → causes ……

①Definition, causes, and differential diagnosis of stridor :-

Definition :- Noisey breathing, originated in the larynx or trachea due to partial obstruction of the larynx or trachea.

Causes :-

1- Congenital (common in child).
2- Traumatic.
3- INFLMATORY
a-Acute specific (diphtheria).
b- Acute non-specific :- a- Acute laryngitis in children. b- Acute epiglotitis.
c Chronic specific (granuloma

4- Neoplastic :- a- Multiple papillomatosis. b- Cancer of larynx.

5- Bilateral vocal cord paralysis. 5- Laryngeal edema.

Differential diagnosis :- 1- ..... 2- .....

3- ..... 4- .....

②Causes of stridor :-

1- Congenital as web.
2- Traumatic as F.B inhaled and corrosive laryngitis.
3- Inflammation all acute and Chronic.
4- Bilateral Vocal cord paralysis.
5- Neoplastic all Malignant and benign as juvenile Multiple papillomatosis.
6- Laryngeal spasm or laryngeal edema.

③- Causes of stridor in children :-

1- Congenital :- all laryngeal disease 7 causes.

2- Traumatic :- as F.B inhaled and corrosive laryngitis. 3- Inflammatory :- All acute.

4- Neoplastic :- Juvenile Multiple papillomatosis.

5- Laryngeal spasm or laryngeal edema.

Stridor

Difficulty noisy breathing due to partial upper airway obstruction (Larynx ± Trachea).

- **Causes:** gltti and supglotti --> inspiration ,subglatit ,trachea --> biphasi ,brochial --> expiration

1. Congenital: All (see before). lareneal stenosis ,largeomalagia ,congental web

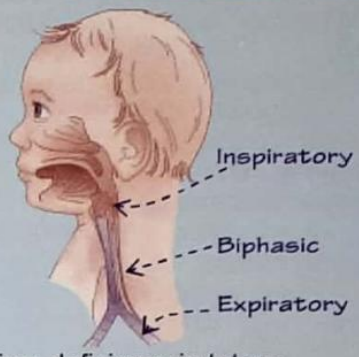
2. Traumatic: All (see before).

3. Inflammatory:

- Acute non-specific: Acute laryngitis in children (4s).
  Acute epiglottitis.
  Acute laryngotracheobronchitis
- Acute specific: diphtheria
- Chronic specific: granulomas (see before) TB,lebrasy ,syphils

4. Neoplastic: Benign: Multiple papillomatosis
Malignant: Cancer larynx.

5. Miscellaneous: Bilateral abductor VC paralysis.
Laryngeal oedema.
Laryngeal stenosis.



N.B. Causes of stridor in children:

1. Congenital: All.
2. Traumatic - FB inhalation.
   - Corrosive laryngitis.
3. Inflammatory: All acute (? Specific & non-specific).
4. Neoplastic: Juvenile multiple papillomatosis.
5. Miscellaneous:

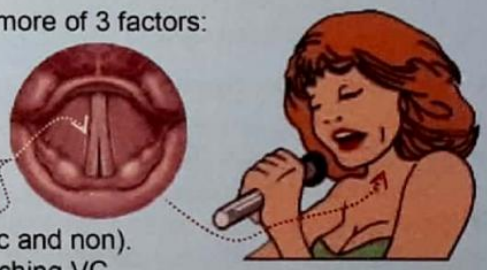
- Laryngismus stridulus: laryngeal spasm due to calcium deficiency in tetany.
- Laryngeal oedema.
- Bilateral abductor VC paralysis.

• Clinical picture of upper airway obstruction:

- Stridor.
- Irritability, restlessness and fatigue.
- Tachycardia (↑ pulse rate).
- Tachypnea (↑ respiratory rate).
- Working alae nasi.
- Working accessory muscles of respiration.
- Retraction of suprasternal, supraclavicular, intercostal and subcostal spaces.
- Congested neck veins.
- **Late signs:** bradycardia and cyanosis.

Hoarseness of voice (Dysphonia)

Rough quality, low-pitched voice due to one or more of 3 factors:
Impairment of VC Adduction.
Impairment of VC Tension.
Impairment of VC Vibration (Mobility).



- **Causes:**

1. Congenital: as web.

2. Traumatic: All.

3. Inflammatory: All acute and chronic (specific and non).

4. Neoplastic: Benign or malignant tumour reaching VC.

5. Miscellaneous: - Unilateral VC paralysis. --> bilateal --> stridoer
- Laryngeal oedema. --> stridor ,horaceness
- Crico-arytenoid joint arthritis.
- Hysterical.

⑤- Causes of stridor without hoarseness of voice (change of voice) :-	⑥- Causes of hoarseness without stridor :-	⑦- Causes of hoarseness of voice :-
Any causes lead to bilateral cord paralysis lead to stridor without hoarseness A- Intracranial causes:- 1- Traumatic. 2- Inflammatory 3- Neoplastic. 4- Vascular degenerative B- Cranial causes :- 1- Traumatic. 2- Inflammatory 3- Neoplastic. 4- Idiopathic. C- Extra-cranial :- In neck as thyroid operation esophageal cancer, trauma.	Unilateral paralysis of vocal cord.	1- Congenital :- as web. 2- Traumatic :- as Foreign body inhaled 3- Inflammatory :- as acute or Chronic 4- Neoplastic :- as benign or Malignant 5- Miscellaneous :- as a- Unilateral vocal cord paralysis b- Hystrical c- Laryngeal edema..